

**THE  
RAILWAY GAZETTE**

A Journal of Management, Engineering and Operation  
INCORPORATING

Railway Engineer • TRANSPORT • The Railway News

The Railway Times    Herapath's    • RAILWAY RECORD.  
Railway Journal

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## ELECTRIC RAILWAY TRACTION

*A Supplement illustrating and describing developments in Electric Railway Traction is presented with every copy of this week's issue*

## DISPATCH OF "THE RAILWAY GAZETTE" OVERSEAS

*We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE possesses the necessary permit and machinery for such dispatch, and any reader desirous of arranging for copies to be delivered to an agent or correspondent overseas should place the order with us together with the necessary delivery instructions.*

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## Budget Reflection

IN times of unexpected change such as we now live in, we are not surprised, as our forebears would have been, when the object of the Budget is revealed as not what it was. Formerly it was generally understood to be a presentation of the nation's revenue and estimated expenditure, with the purpose of raising funds by taxation sufficient to produce a balance. Last Tuesday, the Chancellor of the Exchequer frankly showed this as a purpose secondary to that of limiting the purchasing power of the individual. He admits the impossibility of raising enough by taxation to pay for the war, and, indeed, had already stated in Parliament a month or so ago that money for this purpose was obtained by borrowing from the banks, the presumption being that the proceeds of taxation go to meet the charges on such loans. That, of course, was the procedure in the last war, when, of the huge total spent, only so small a fraction was collected in taxation that the National Debt rose by some £7,000,000,000. There is still some reason for misgiving as to whether the whole of the productive power of the nation is yet being directed towards winning the war. So long as there are unemployment and unproductive fields and factories, our full effort is not being exerted; and since money is a means, not an end, there should be no limit to the application of such means towards a specified end, whether the expenditure incurred can be recovered in taxation or not. To illustrate the absurdity of any restriction on productive effort at the present time, which may be caused by treating money as a scarce commodity, we have only to consider that, were we to limit national expenditure to the ability of taxpayers to meet it, we should have to limit the duration of the war to the matter of another week or so. A final reflection on the present situation is that, barring an orgy of destruction which should scarcely be possible in view of the strength of modern defensive warfare, there will at the end of the war be so great an increased productive capacity that to contemplate a return to pre-war conditions of scarcity is quite futile. We have to look forward in conditions after this war to something very different from that which has ever been known before.

\* \* \* \*

## Railways and the Budget

Those who had hoped that the Chancellor of the Exchequer might drop a hint in his Budget speech as to how the railways would stand in relation to Excess Profits Tax—some City pundits had cherished an idea that he might clarify the position—were disappointed. It is possible, however, that Sir John Simon will do so when he brings forward his detailed proposals for amending the E.P.T. provisions. In another section of his speech there was plenty of food for thought for railway investors. Are the railway companies to be subject to the limitation of dividends which may be paid by public companies? As statutory companies they are outside the application of legislation relating to the generality of public companies. The latter are not to distribute greater dividends than those in any one of the three pre-war years. The restriction will be subject to a minimum rate of 4 per cent. which will be allowed to companies that in recent years have not been able to pay that amount. The object of this legislation is to force companies to retain their profits in the business against the difficult times which may arise after the war. It may well be that the railways will be exempted specifically from this section of the Finance Bill in view of their special circumstances, or that they will rank among the "hard cases" for which the Treasury will exercise dispensation. Superficially, so far as the railways are concerned, the proposed limitation appears to be

out of accord with the financial agreement between the railways and the Government.

\* \* \* \*

### Swedish Iron-Ore Transport

The enormous iron-ore deposits in the neighbourhood of Gällivare, which provided the original incentive for building the Lapland iron-ore railway, described in *THE RAILWAY GAZETTE* of April 19, proved unsuccessful commercially in the early years of the enterprise, mainly by reason of the difficulty and cost of transport. As long ago as 1872 the value of this iron-ore to the States of Germany—then just linked to form the first Reich—formed the subject of discussion in the trade press. Early in that year the Gällivare iron works changed hands, and in endeavouring to rectify the position, which was described as "spending 11 dollars to get back 10," the new proprietor examined the possibilities of improving transport to the coast by using the Luleälv, cutting a canal, and building a railway for the last 14 miles to the iron-ore mountain. Doubtless this would have improved matters, but the British scheme for a through railway between Luleå and Narvik was incomparably better, as it offered access to an ice free port in the north, as well as to the Gulf of Bothnia in the south, which is closed by ice for more than half the year, besides providing transport for the even more important mines at Kiruna. When the British enterprise encountered financial difficulties, Dutch interests lent a hand, but Germany—probably the chief potential beneficiary—declined to participate. Eventually the undertaking was completed by the Swedish and Norwegian States. (See illustrations on page 606.)

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### Traffic Prediction

Everyone recognises that over the period covered by railway history the prosperity of transport has been closely bound with that of industry in general, but in the paper entitled "The Empirical Forecasting of Railway Traffic" prepared by Dr. C. Douglas Campbell for the Institute of Transport it is shown that railway traffic trends follow those of industry (based on the industrial share index) with a lag of seven to nine months; *e.g.*, a general rise in industrial shares is followed some eight months later by increases in freight tonnage and passenger traffic. In general, shorter warning of traffic fluctuation is given during an up-rise in trade than during the descent to a slump. The prediction of traffics is shown to be influenced mainly by cyclical changes of trade and long-period changes in the volume of productive capacity, in addition to the general seasonal and short-period fluctuations. Just what the position of the railway traffic astrologer will be in the future is difficult to gauge, but it is probable that some of the factors he uses will be quite different from those now forming the bases of estimates. Many believe it to be unlikely that the continuance of the financial and commercial system that hitherto has been the essential cause of those trade slumps and booms, so graphically shown in Dr. Campbell's paper, will be tolerated.

\* \* \* \*

### Publicity and Idioms

An essential feature of our trade with other countries is the publicity necessary to make known the kinds and quality of our manufactures. In this respect British trade interests have often been accused of affording insufficient information to potential markets abroad, and of an undue insistence in the use of the English language. On the other hand, when catalogues are prepared in a foreign idiom, we are criticised because the announcements are not couched in precise academic phraseology, and we have before us a foreign newspaper in which catalogue language

is censured and ridiculed. Possibly there is room for improvement in this respect, and in the interests of exporters it is desirable that advertisements for abroad should be edited carefully. Certainly there are difficulties in translating trade terms which in some cases have no exact equivalents, or when, as in the case of both the English and the Spanish languages, the European idiom is not identical with that in use in the Americas. Technical dictionaries may mislead if used without a knowledge of the subject. In the preparation of advertisements or catalogues in a foreign language the happy mean should be sought between an exact literal translation (which may be stilted and unattractive) and a freely idiomatic rendering without departing overmuch from the original.

\* \* \* \*

### Agreed Charges in Canada

The "agreed charge" system on the Canadian railways, authorised by an Act of Parliament and in operation for over a year, is not working to the extent that was expected, according to officials of the transport commission. Only six agreements have been approved. One has expired, two others are about to expire, and some new ones are on the way. Nevertheless, reasons are given for the system not being used more fully. One is that the railway companies are so busy with ordinary traffic that time is lacking to work up these special agreements. It is suggested, moreover, that so much war and ordinary traffic is coming to the railways that there is not the same stimulus to make special agreements. The "agreed charge" in Canada is an adaptation of the British system. It permits a railway to enter into a special rate agreement with a trader to handle the whole or the greater part of his business for a year. In consideration of this long-term contract, a special rate is authorised; the meeting of lorry competition was the particular objective. The main agreement related to the carriage of oil in tanks. In Great Britain an agreed charge is usually a flat rate for any distance, but this is not feasible in Canada where distances are so much greater.

\* \* \* \*

### Alaska Railroad

Proposals for the diversion of the Alaska Railroad from its present seaboard terminal at Seward to Portage Bay were criticised severely in the U.S. Congress recently. It was pointed out that the only appropriations in the budgets had been to make up the difference between revenue and working cost, but the financial failure of the line was due simply to no grant having been made to finish the line properly and put it in good working order. If this was done, there would be no need for yearly appropriations to cover operating deficits. The general manager of the line has estimated that the cost of changing the terminus to Portage Bay would be \$5,000,000, but the Alaskan delegate in Congress said he had good reason to believe that the cost would be in excess of \$10,000,000, an expense which could not be justified by the present traffic nor any that could be expected in the next quarter of a century. The interest charges on even the lowest estimate for changing the terminal would more than pay the increased operating expenses over that part of the line it was proposed to abandon. A summary of the Alaska Railroad results for the year 1938/39 was given in our issue of March 15, page 394.

\* \* \* \*

### Narrow-Gauge Lines of the Reichsbahn

Out of total route-mileage of some 33,450 owned by the German State Railway, excluding Austria and the Sudetenland, only some 570 miles, or 1·7 per cent., are not of standard gauge, the majority even of the secondary, or *Neben-*

*bahn* lines being built to that gauge in most parts of the country. Of the narrow-gauge lines more than half, totalling 336 miles, are found in the territory of the former Kingdom of Saxony, which embarked on a policy of narrow-gauge construction in the early 80's, in an endeavour to meet demands for better means of communication in the most economical manner. The Saxon narrow-gauge lines formed an important element in the kingdom's railway system, itself one of the largest in Germany prior to the formation of the Reichsbahn after the last war. Some of the narrow-gauge routes always needed a subsidy, but others did well and the system as a whole earned a profit. Recent years have been difficult, however, and questions have often arisen of closing some lines, or abolishing passenger traffic on them, as well as the possibility of gauge conversion. The Müglitz Valley line was converted in 1938.

\* \* \* \*

#### Loading 1,400-ft. Rails

A novel method of loading 31 1,400-ft. lengths of 131-lb. rails from a ground-level stack at Schenectady on to flat trucks was recently devised by the Delaware & Hudson Railroad engineers, and is described by our American contemporary *Railway Engineering & Maintenance*. The ends of the rails were first raised on to a ramp terminating in a trestle spanning a specially laid track so as just to clear the trucks. The part of the track beyond the trestle was laid in a straight line along the centre line of the rail stack produced. The section of track under the raised ends of the rails curved outwards, however, clear of the rail ramp, and then, with a reverse curve, was laid parallel to and for the length of the rail stack. A train of flat trucks was backed on to this track until the car next the engine was under the trestle. Two of the rails were attached to the engine, which, in moving slowly forwards, pulled the two rails and the trucks, so that the rails came up the ramp and over the trestle, and the trucks came over the reverse curves beneath the rails ready to receive them. The loading of two 1,400-ft. rails was thus effected on the train of flat trucks, which was then pushed back to its original position, and the process was repeated till one train was loaded complete with 16 rail lengths; a second train was used for the remaining 15 rails, and both trains were loaded in less than two working days. To adjust the rails to the correct alignment on the trucks a caterpillar-mounted crane was used. No difficulty was experienced in transporting the rails to the site of relaying at Plattsburg, 145 miles away.

\* \* \* \*

#### Non-Stoppers

Many times we have related the sufferings of railway companies from the attentions of kleptomaniacs. Cutlery disappearing from restaurant cars and towels from lavatories were among the peacetime complaints of this kind. Today, most of the light-fingered travellers responsible for such outrages seem to have found their way into the Forces, where they exercise a still more fantastic choice of articles to steal. We know of two large camps where there is barely a single plug to be found in the lavatory washbasins. An elaborate system of discipline, developed through the centuries, is completely outwitted by an anti-social crime which it can neither prevent nor remedy. Although we believe that replacements can be purchased at what before the war was a threepenny and sixpenny store, there is a natural reluctance among the law-abiding to be seen in possession of articles calculated to bring them under suspicion, which knowledge doubtless crowns the unnatural glee of the malefactors in their wrongdoing. We hope that when peace returns the resourcefulness of the railways will be equal to combating an outbreak of such a practice on their own property.

### The Rise in Charges: Railways 10%—Post Office 70%.

THE decision of the Minister of Transport to increase railway rates and charges from May 1 has met with a wide measure of opposition. In some quarters the rise has been greeted as a surprise, although why that should be it is difficult to understand, for the scheme of adjustment of charges to cover wartime increases in costs in lieu of the Railways Act, 1921, was fundamental in the financial agreement concluded between the companies and the Government, and at the annual meetings of the railways the probability of a rise in charges was freely discussed. If it is the amount of the rise which has surprised the public, that can only be because of lack of appreciation of the manner and extent by which railway costs have risen. In THE RAILWAY GAZETTE the factors entering into the impending rise in railway charges were discussed at some length on March 22. Then it was fully recognised that—as Lord Horne had stated at the G.W.R. annual meeting—there were “difficulties and objections both practical and political” in the Government plan of linking charges to costs. Lord Stamp at the L.M.S.R. meeting had stated that he did not think the principle adopted was going to be in the long run the best for all the interests involved. These difficulties are now being appreciated by a wider circle and no doubt some are beginning to realise that the railway plan, which was rejected by the Ministry, might have had considerable advantages in present circumstances.

In part no doubt the unfavourable reaction to the higher charges has arisen from the way in which it was presented to the public. The Minister's statement to the House of Commons was far from clear, for in speaking of the estimates submitted by the Railway Executive Committee of increases in working costs amounting to £26,750,000 he said, “I am satisfied that increased working costs to the extent of £22,250,000 have been proved.” This at least suggested that the balance had not been able to withstand the scrutiny of his Department. Further, the Minister did not deal adequately in the House with suggestions made at once that the increase in charges should be referred to the Railway Rates Tribunal. It should be mentioned here that, for the purposes of this agreement, the Minister of Transport has suspended the jurisdiction of the Railway Rates Tribunal in regard to the general level of rates, but has the power to seek the advice of a consultative committee, composed of the permanent members of the tribunal, acting in an advisory capacity. He could well have explained that it was unnecessary to remit the proposed increases to the tribunal because no question of a public hearing or judicial decision could arise. The agreement stipulated that the railways were to be reimbursed by higher charges for any increase in costs arising from war conditions. All that had to be proved—and that was a matter of accountancy—was the rise in costs. Moreover, as has been amply demonstrated by the comments in the daily press, his statement that “This deficit has been running on for some time, and under the terms of the agreement . . . His Majesty's Government is liable to reimburse to the controlled undertakings a sum approximating to £400,000 a week” was widely misunderstood. What he meant was that the increase in working costs was of the order of £400,000 a week and that, under the agreement, the Government was pledged to enforce higher railway charges to make good that sum to the companies.

We find it difficult to believe that the long-tried and highly efficient machine which the railway companies have built up for preserving and improving their relations with the public was used to the full in the presentation of the



change in the level of rates. The skill of this organisation in making palatable to the travelling and trading public matters of this kind has been frequently demonstrated. When, in October, 1937, the general increase of 5 per cent. in railway charges was enforced, the public was made ready for it and acquiesced in its necessity. Although it was not generally known, THE RAILWAY GAZETTE of February 16 was able to indicate some of the useful work which was done in influencing public opinion at the time the financial agreement with the Government was made known. Far different then was the full exposition of the causes and effect of the agreement in relation to the various parties to it from the bald statement of the Minister on the latest occasion. At the same time it is appreciated that the present shortage and rationing of paper curtails opportunities for both editorial propaganda and advertising announcements.

The importance to the railway companies of carrying the public with them in these matters is very great, for it is not as generally realised as it might well be that rates and charges are now largely removed from the discretion of the companies and have become vested in the Government. It is essential that the great and costly efforts which the companies have made with marked success over a long period of years to capture public goodwill should not be jeopardised. This is a matter which has been stressed before in THE RAILWAY GAZETTE in various connections but it is so vital that it will bear repetition. The chairmen of the railway companies recognised the dangers inherent in rate-raising when they addressed their annual meetings and were careful to point out that they had accepted the agreement based on that principle, but that they were not attracted to it.

Why the £4,500,000 of extra costs, representing increases due to blackout and other precautionary measures, should be held back for examination in the light of further experience is not clear, for in our opinion these are obviously due to "conditions arising from the war." Nor, in the figures given by the Minister, is there any indication of the amount of the loss of earnings by the London Passenger Transport Board, which, in the House of Commons on February 13, he specifically stated was to be made good by the adjustment of charges. The consultative committee is considering the best means of obtaining an increase in revenue from the board's road services. It does not follow, of course, that the increase in fares for these sections will also be 10 per cent. The difficulties of applying a percentage increase of less than 50 per cent. to short distant travel are well known and were adequately discussed before the Railway Rates Tribunal a year ago when the 5 per cent. advance in charges already in force on the main-line railways was extended to the London area. The limitations of the currency prohibit additions of this or similar order to the lower fares and the reduction of fare stages is prone to result in over-riding or in slightly greater physical exercise on the part of the passenger without producing the revenue sought.

The debate in the House of Commons on Tuesday last did not add anything of great value. The Minister, however, was able to point to the changes which were made in the last war and contrast them with those now contemplated. In 1919 increases were imposed varying from 25 per cent. plus a flat addition of 3d. a ton, to 60 per cent. plus 1s. a ton, according to the class of goods. Within a few months it was necessary to impose further increases. Passenger fares, which had been increased by 50 per cent. in 1917 with the object of discouraging travel, were further increased to 75 per cent. above pre-war rates, and the rates for merchandise were increased to 100 per cent., plus flat-rate additions of from 6d. to 1s. a ton. On the top of that about £150,000,000 had to be found

during the last stages of the war to implement the guarantee of net receipts and to meet deferred liabilities, mainly as a result of failure to meet increased working costs by current increases of charges. It was with these lessons in mind, declared the Minister, that the Government had decided that in this war the railways should be kept solvent, and that, as they were bound to carry out the directions of the Government, under control, irrespective of the commercial advantage or otherwise of doing so, increases in working costs had to be met by such current additional charges as were justified by the facts. It is not without interest to note that the strongest critics of the new charges were Opposition members who at the same time adopt nationalisation as their policy. Immediately before the debate on railway charges the Chancellor of the Exchequer in his Budget speech had afforded an example of a rate increase of a national undertaking. It is perhaps sufficient to quote advances of from 66½ per cent. to 100 per cent. in Post Office mail charges against the comparatively modest rise of 10 per cent. in rail charges.

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### San Paulo (Brazilian) Railway Co. Ltd.

ON the main line of 86½ miles on the 5 ft. 3 in. gauge the traffic receipts showed in the year 1939 an increase in currency of 458 contos. or 0.32 per cent. in comparison with 1938. In sterling they amounted to £1,674,922, an increase of £36,603 or 2.19 per cent. Working expenses on the main line increased from £1,174,318 to £1,211,573 and were 72.34 per cent. of the gross receipts, as compared with 71.68 per cent. in 1938, and net revenue of the main line was £651 lower, at £463,349. On the Bragantina section of 67 miles (metre gauge) there was a loss on working in 1939 of £9,222, against £10,546 in 1938. An improvement was shown in the average rate of exchange at which remittances were made during 1939 as it was 2.80542d. for the milreis compared with 2.75292d. during 1938. The operating ratio in currency for the whole system was 73.28 per cent. in 1939 against 72.70 per cent. in 1938.

Paying passengers, including 2,450,250 holders of season tickets (on a basis of 600 single journeys on each yearly ticket) and 67,267 holders of mileage tickets, numbered 16,812,597 in 1939 compared with 16,014,005 in 1938, and the passenger receipts of £311,707 showed an improvement of £32,436, towards which increase first class contributed £13,113. First class receipts represented 43.26 per cent. of the total earnings from passengers in 1939 compared with 43.59 per cent. in 1938. In general merchandise, coal, etc., there was an increase of 83,080 tons, but the amount of exported coffee fell from 745,979 tons to 618,298 tons. Receipts from merchandise traffic amounted to £1,259,080, a decrease of £3,189, but livestock receipts were £1,989 higher. The general financial position is indicated in the accompanying table:—

	1938	1939
	£	£
Gross receipts ... ..	1,661,192	1,699,710
Expenditure... ..	1,316,764	1,352,275
Net receipts ... ..	344,428	347,435
Other income ... ..	127,843	238,094
Total net income ... ..	472,271	585,529
Debenture interest and other payments	337,849	434,767
Dividends ... ..	110,000	125,000
Brought forward ... ..	62,023	86,445
Carried forward ... ..	86,445	112,207

"Other income" in 1939 includes £136,109 transfer from bridge renewal fund and £77,976 interest on deposit with Banco do Brasil under agreement of June 29, 1933 (previously held in suspense). Among "other payments" are £102,067 transfer to rolling stock replacement reserve, £100,000 transfer to reserve, £65,636 to the associated



road company under agreement, and £40,000 to income tax and N.D.C. The dividend of 2½ per cent., tax free, for the year 1939 on the ordinary stock compares with 2 per cent. for 1938, 4 per cent. for 1937, 5 per cent. for

1936, and 2½ per cent. for 1935 and 1934. As a result of a report made by a commission appointed by the Minister of Transport, the rates for passengers and goods were increased from October 1, 1939.

## LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

### The Government and the Railways

London, S.W.1, April 23

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—There will be a large number of readers of THE RAILWAY GAZETTE who will agree, in part at least, with the letter from "Realist" published in your issue of April 12. The financial agreement between the Government and the railways leaves holders of L.N.E.R. second preference stocks, and all issues junior to them, in an unenviable position. If the agreement were to be taken as the basis for a wider amalgamation or for nationalisation after the war, it would appear that the likelihood of anything more than a token recognition of their securities would be remote. Yet surely it cannot be argued that the £66,000,000 of second preference, £42,000,000 of preferred ordinary, and £36,000,000 of deferred ordinary capital, have made so little contribution to the building and maintenance of the system that the first-named can look with confidence to a return of no more than 1·2 per cent. and the two others are left without any promise of a return.

The fact that it has been found necessary for the Minister of Transport to sanction an increase of 10 per cent. in railway charges within eight months of control being imposed, in order to offset wartime advances in costs, shows that the railways are not finding it easy to maintain their guaranteed revenues, let alone achieve the substantial gains in net revenues which some who criticised the agreement as being unduly generous appeared to consider inevitable. Let it be noted, too, that these rates increases are calculated to produce but £18,000,000 a year, and are to come into operation on May 1, whereas the railways put their higher costs for the period to the end of next March at £26,750,000.

S. P. SHANNON

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In reference to the letter from "Realist" in THE RAILWAY GAZETTE of April 12, I would suggest that a further point he could have made in stressing the lack of generosity of the financial agreement with the Government is that nothing has been given the railways for the benefits they could legitimately have expected had the Government implemented its promise to give legislative effect to the Transport Advisory Council's recommendations on the Square Deal campaign. The guaranteed minimum revenues of the railways are fixed in relation to years during which they were suffering acutely from road competition and from conditions from which the then Minister of Transport had declared there was a *prima facie* case for relief.

The outbreak of war prevented Parliament considering the Bill which it was declared would be presented. The fact that the railways' case had been considered and judged favourably, even though in the process of negotiation with opposition parties the railways' original claims had become emasculated, should surely have had its weight in the financial agreement discussions.

Faithfully yours,  
E. M. GREENE

### An Old "Parliamentary" Ticket

Bordyke, Burgess Hill, Sussex  
April 20

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I have read with interest the letters published in your issues of February 23 and April 12 concerning an old

railway ticket in possession of "A. B.," numbered 177 and bearing the inscription "Parly Train DOVER to TEWELLS, Third Class." My recollection of old tickets leads me to think that the S.E.R. retained that type between stations on its own system into the 'eighties. The Tunbridge Wells branch was opened in 1847 and the Parliamentary Trains Act came in force in 1844; so the ticket might have been issued in 1851-61 or -71. From the low serial number it may well have been 1851. By 1881, the steamers were using the Admiralty Pier at Dover, and tickets would have been issued there by the railway. The impression on the back (reproduced in your April 12 issue) shows it to have been issued by the local Dover Landing Pier Company (as Agents for the S.E.R.).

The suggestion that the ticket was issued in a year ending in "1" is based on the supposition that what looks like the numeral 1 in the date line is the last figure of the year. The more usual practice about that time, however, was for two figures of the date to be used, e.g., 51. At one period, to prevent fraud, every booking clerk was provided with a



An old woodcut showing Dover landing pier in the foreground

separate year type to insert in the date-press when he issued tickets, which also printed a secret mark on the ticket, so that it could be discovered who issued any ticket. The clerk took his year type out of the press when he went off duty every day. He kept it in his possession till he again came on duty and used it.

It may be that special arrangements were made with these tickets, as the impression of the Dover Landing Pier Company was sufficient to show that it had issued the ticket. The Dover landing pier is in the foreground (with figures) on the accompanying illustration. This pier was practically dry from 1½ hr. before till 1½ hr. after low water—when small boats had to be used between the steamers and pier. This enabled the S.E.R. to advertise that "small boats were never used" on its competitive Folkestone service—which was tidal.

Yours faithfully,

G. A. SEKON

## PUBLICATIONS RECEIVED

**Modern Train Signalling on British Railways.** By John Aitken. Glasgow, W.4: S. B. Aitken, 16, Upland Road. Obtainable from station book-stalls. 7½ in. × 5 in. 166 pp. Illustrated. Price 2s. 6d. net.—In this handy and plainly-written little work the author, who has published two or three other manuals for the practical guidance of railwaymen, gives a good general account, from the operating point of view, of the principles of the block telegraph and other forms of signalling commonly met with on British railways at the present day. The various regulations are ably explained, and some particulars are given of the working of certain typical signalling instruments, with details relating to types of signals, signal repeaters, track circuit, and other devices. Employees of the traffic department of all grades will find it a helpful companion and it has the advantage of being carried comfortably in the pocket for ready reference. There is a rather serious mistake, which should be set right in any future edition, where the author illustrates a Southern Railway standard 3-position block instrument and describes it as Preece's. The Preece instruments, both 3-wire and 1-wire (the former the older), give their indications by means of a small semaphore arm and have only two positions. The

author writes for the operating man, not the signal engineer, and we can commend the volume to all who wish to secure a general understanding of signalling.

**A History of the Great North of Scotland Railway.** By Sir Malcolm Barclay-Harvey. London: The Locomotive Publishing Co. Ltd., 3, Amen Corner, E.C.4. 9 in. × 5½ in. × 1¼ in. 222 pp. + 32 pp. of photogravure illustrations, and coloured frontispiece. Price 10s. net.—An impression formed solely on the title of this book may lead to the erroneous conclusion that the subject is of purely local interest. Actually, as the author says in his preface, the Great North "gave a lead in a surprising number of ways and was, at least during one period of its life, easily the best of all the smaller British railways." In one respect the Great North has claims to having been the direct inspiration of the two-class passenger facilities that apply generally throughout Great Britain. Sir Malcolm Barclay-Harvey not only says that the Great North had but two classes (first and third) from the time of the opening of its first section, in 1854, but traces to a visit of Mr. Ellis (Chairman of the Midland Railway) to Aberdeenshire in 1872, the revolutionary change to this practice in England.

The story the author has to tell is well written and full of interest; as might be expected, the nearest railway to Balmoral has its own special interest in Royal journeys and a separate chapter is devoted to this subject. Incidentally, it is interesting to read that the Great North did not detail any locomotives particularly for Royal trains, but normally selected two which had just been repainted, and made sure that they were turned out in fine condition. The chapter on the twentieth century is particularly interesting as showing that the Great North was well to the fore in its handling of road motors to provide feeder services to the railway.

For one reason or another the Great North was not always on the best of terms with its neighbours, but as recently as 1905 a proposal to amalgamate the Highland and the Great North under the combined title of the Highland & North of Scotland Railway got as far as the promotion of a Bill in Parliament. Local objection prevented the scheme being adopted, but it is a subject of interesting speculation as to the effects such a merging would have had on grouping in 1921. As it is probable that this volume will come to be regarded as the standard work on its subject, we regret the absence of an index and the paucity of maps; the one map included is a general sketch map, unfortunately inadequate to the requirements of the text.

## THE SCRAP HEAP

### ONE WAY OF SAVING PAPER

At the headquarters of the Southern Railway, the reverse sides of old stencilled notices are now being used as notepaper for inter-office communications. In order that there shall be no risk of the typewritten letters being overlooked, the wording of the obsolete notice is cancelled by a rubber stamp impression in plain bold lettering of the following:—

PLEASE TURN OVER  
THE OTHER SIDE  
IS A LETTER

\* \* \*

### CHANNEL SERVICE RELIC

We are informed, states the *Dover Express*, that recently the Town Clerk received a request for information as to a vessel named the *Dover*, of which a ship's bell, bearing the inscription, "Dover, 1840," and the Royal Arms, had been found in use as a factory bell at Kuntaur, a river port in the Gambia, 150 miles from Bathurst. The finder, Captain R. E. G. Deall, was able to acquire it and sought details of its history.

The vessel was one of the Admiralty fleet of vessels which carried mails and passengers between Dover and the Continent from 1837 to 1854, when the work was put out to contract with the late Mr. J. G. Churchward, who

provided his own vessels and established the Packet Yard. He ran this contract until the old London, Chatham & Dover Railway took over the work in 1865.

H.M. Packet *Dover* was the vessel on which two couriers travelled to the

Continent on November 24, 1840, carrying official news of the birth of the Princess Royal, Queen Victoria's first child, who married Frederick, Crown Prince of Prussia. Presumably, H.M. Packet *Dover* was sold when the Admiralty service was discontinued, and it was later taken to the West Coast of Africa.



This bell has been at High Barnet station since the opening of the branch from Finchley Central, 68 years ago, and has been rung one minute before the departure of every train. It is now to be presented to the Barnet Museum

## OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

### CANADA

#### Financial Results in 1939

The Dominion Bureau of Statistics reports that gross earnings of Canadian railways for 1939 amounted to \$363,325,824, against \$333,094,288 for 1938. With an increase in operating expenses of only \$8,542,689, the operating income increased by \$21,636,865, from \$25,012,390 to \$46,649,255. Freight traffic increased by 16.7 per cent., and substantial increases were recorded every month from May to September and for November and December. Passenger traffic declined by 1.7 per cent., and decreases were recorded in eight of the twelve months. The monthly average number of employees increased from 119,228 to 121,007, or by 1.5 per cent., and the payroll by \$5,132,391 or 2.8 per cent.

Gross revenues of Canadian lines of the Canadian National Railways for 1939 rose to \$173,059,119, as compared with \$156,585,254 in 1938, an improvement of 10.5 per cent. Operating expenses increased by \$5,461,839, or 3.6 per cent., and the operating income by \$154,580, or from \$10,899,908 to \$11,054,488. Freight traffic increased by 17.9 per cent. and passenger traffic decreased by 2.2 per cent. All four lines in the U.S.A. showed larger gross revenues and improved operating incomes, although deficits were shown by the Duluth, Winnipeg & Pacific and the New England lines. The gross revenues of the whole system increased to \$203,820,186 from \$182,241,722 in 1938, and the operating income showed a surplus of \$12,438,388 instead of the deficit of \$2,133,039, an improvement of \$14,571,427 over the previous year's figure.

The Canadian Pacific Railway Company earned \$152,148,993 in 1939, against \$143,198,532 in 1938, an increase of \$8,950,461 or 6.3 per cent. Operating expenses were increased by \$1,330,441 and the operating income improved from \$20,752,466 to \$28,523,819, or by \$7,771,353. Freight traffic was 15.7 per cent. heavier than in 1938, but passenger traffic was 1.3 per cent. lighter.

#### New C.N.R. Locomotives

To meet the demands of increased traffic resulting from war preparations, the Canadian National Railways have on order two batches of "Northern" or 4-8-4 type locomotives. One consists of 15 engines under construction by the Montreal Locomotive Works Limited, and the other of 10, entrusted to the Canadian Locomotive Company, Kingston. The two batches are identical except that the Montreal engines are fitted with boosters; they are being built to the design of Mr. John Roberts, Chief of Motive Power & Car Equipment, C.N.R. The first of the booster engines was delivered on March 23, and was inspected at Bonaventure station by

Mr. S. J. Hungerford, Chairman and President; Mr. N. B. Walton, Vice-President of Operation; and Mr. Roberts.

The tractive effort exerted by these engines is 67,000 lb. with booster and 57,000 lb. without, and they are designed to haul loads of 100 and more freight cars at low speeds or 50 to 75 cars at 55 m.p.h., the horsepower being about 4,000. Coupled wheels are 6 ft. 1 in., boiler pressure 250 lb. per sq. in., and the weights in working order are: engine 201 tons; tender, loaded with 11,600 gal. water and 20 tons of coal, 142 tons, combined total 343 tons. The overall length is 94 ft. Roller bearings are fitted to all but the coupled axles. Delivery from the Montreal works is expected to be at the rate of two engines a week.

### UNITED STATES

#### Mileage Abandoned

The route mileage of unprofitable branch lines abandoned in 1939 was 1,783, bringing the total mileage abandoned since 1917 to 23,892 miles. During these 23 years only 10,530 miles of line have been constructed, so that the net decrease amounts to 13,362 miles.

#### Air-conditioned Stock

The following table shows the numbers of air-conditioned vehicles owned by the Class I railways and the Pullman Company on January 1, and the number added during the year then ended:—

	1939	January 1, 1940	Increase
Class I lines ...	6,022	6,596	574
Pullman Co. ...	4,955	5,119	164
Total ...	10,977	11,715	738

#### Reduced Fares on the P.R.R.

As from March 25 the Pennsylvania Railroad is introducing a new schedule of passenger fares. The basic fare is 2 c. (roughly 1d.) a mile, and on single journeys there will be a reduction of 20 per cent., and on return journeys up to 100 miles one of 10 per cent. as compared with fares hitherto in force. Return fares for over 100 miles will be on a more favourable sliding scale also.

#### Convertible Day Coach—Sleeping Cars

The Pullman Company is building two experimental convertible day-coach—sleeping cars. They will accommodate 45 passengers both by day and by night, the berths in the latter instance being arranged in three instead of the usual two tiers; the maximum sleeping capacity in Pullman vehicles has until now been 36. With the new capacity it is considered that these cars can be worked profitably at coach fares plus a nominal charge for a berth. If successful, this new line of policy is likely to prove an important asset in the com-

petition with road coaches, buses and private motorcars.

#### Petition to Abandon an Entire Group of Suburban Lines

The New York, New Haven & Hartford and Old Colony Railroads are petitioning the Interstate Commerce Commission for authority to abandon a 96-mile group of suburban steam lines to the south-east of Boston. Many of these lines are double or multiple track, and, prior to the ravages of road motor competition, carried some of the heaviest traffic in the States. In 1939 passenger traffic on these lines was but 44 per cent. of its volume in 1923. The annual loss sustained by maintaining the passenger services is over \$670,000, excluding the \$600,000 which the Old Colony lines have to pay for using Boston South station. It may be mentioned that the New Haven road's trustees operate the Old Colony property under court direction. The Western and Cape Cod lines of the Old Colony Railroad are not affected. If the petition is granted this will be the first complete abandonment of an entire group of steam-worked suburban lines.

### NEW SOUTH WALES

#### Result of Working Government Railways

The returns for the first six months of the financial year (July-December, 1939) have been very satisfactory. Earnings amounted to £10,520,698, compared with £9,653,327 in the corresponding six months of the previous year. The increase of £867,371 was made up of coaching £173,009, goods £692,989, and miscellaneous revenue £9,559, but there was a drop of £8,186 in earnings from the refreshment room services. The working expenses in the same period showed a decrease of £107,866, the aggregate totals for the respective years being £7,042,549 in 1939 as compared with £7,150,415 in 1938. The gross improvement by bulking increased earnings and decreased working expenses was, therefore, £975,237.

The principal increase on the passenger side was in respect of second class travel, the earnings from which increased by £196,628. First class traffic dropped by £6,554, and parcels, mails, etc., by £17,065. On the goods side there were increases in tonnage of general merchandise traffic 33,203 tons, wool 37,337 tons, coal and coke 969,912 tons, other minerals 90,921 tons, and livestock 66,046 tons. Commodities which showed a decrease were hay, straw, and chaff 24,327 tons, and grain, flour, etc., 66,783 tons.

After making allowances for Statutory charges in respect of interest, exchange, sinking fund, etc., the net result for the six months was a surplus of £423,149.

#### Abolition of First Class on Suburban Trains

From January 1, 1940, first class travel within the Sydney suburban area



was abolished. During the past ten years patronage of first class accommodation had steadily declined. During the six months from July to December last, first class tickets issued at suburban stations for travel within the suburban area numbered 351,726, a drop of 213,182 compared with the same period in the previous year. Second class tickets issued in the same period numbered no fewer than 25,338,131.

The difficulties confronting railway administrations in attempting to set apart first class accommodation on peak hour trains has been referred to in THE RAILWAY GAZETTE and—so far as New South Wales is concerned—although some loss of revenue will result, the change has been approved more or less universally.

#### Opening of the Sutherland-Cronulla Line

References were made to the construction of this railway in issues of THE RAILWAY GAZETTE during 1938, and of September 29, 1939. The official opening took place on December 16, when the State Governor, Lord Wakehurst, officiated. The following are some remarks made in the course of the speech by the Commissioner for Railways at the opening ceremony:—

#### HISTORY OF THE NEW RAILWAY

"It is interesting to trace the various steps over the past 40 years which have led to the opening of this modern electric railway. The agitation for a tramway between Sutherland and Cronulla began as early as 1900. In 1908 the Parliamentary Standing Committee on Public Works considered the proposal and reported in its favour. In the same year an Act was passed and the steam tramway authorised was eventually opened in 1911. In 1923 the proposal to build an electric tramway to replace the steam tramway became a matter of considerable interest and the suggestion that it was preferable to build an electric railway was readily received and the tramway remained in service for passenger business until August, 1931, and for goods business until February, 1932, in which month it was closed, and Cronulla in the intervening years has been served by road motor vehicles.

"So firmly convinced were the people of the district served that they should have an electric railway, that they never rested until Act No. 39 of 1936 was placed on the Statute Book authorising the construction of this railway. In recent years loan funds have been hard to get and those areas which have benefited to any material extent by capital expenditure have been indeed fortunate.

#### MODERN EQUIPMENT

"This railway will have the latest in modern equipment, and it will be free from smoke and the danger of starting bush fires. Modern automatic signalling equipment has been installed throughout. The up-to-date electric interlocking machine located at Sutherland, which operates 16 pairs of points and 55 signals, was designed by officers of the railways and manufactured in the railway signalling workshops. The levers in this interlocking machine are of miniature type, so compact that, together with the telephone control panel, the whole occupies only a small space on a table. A signalman seated at the table can control all signalling and telephone operations quickly and easily; he has in

front of him an illuminated track diagram showing the positions of all trains as well as the setting of the points and signals.

#### BRIDGES, STATIONS, & TRAIN SERVICE

"The steel span bridge which carries the line over Prince's Highway shortly after it leaves Sutherland station has 120 tons of steel in its superstructure, and the plate girders, which have a depth of nearly 12 ft. at the centre, are the deepest of this type yet constructed in the State for railway purposes. Throughout the new line, level crossings have been avoided by the construction of over- or under-bridges. Although the line is only about 6½ miles in length, it will be served by no fewer than six stations: Kirrawee, Gynea, Miranda, Caringbah, Wooloware, and Cronulla. The station buildings on the line have been constructed in the modern style [one of them was illustrated in our issue of September 29 last—Ed., R.G.], each one of different design. The platform at Cronulla is capable of dealing with two eight-car trains at a time, its length being 1,276 ft., the second longest platform in the State. Altogether, there is stabling accommodation for seven trains at Cronulla at any one time. It is intended throughout the day to introduce a half-hourly service on this line, and a more frequent service will be provided if the traffic warrants it.

"This new line with its frequent service of trains from and to the centre of Sydney will induce many city residents to migrate to this beautiful residential area, and it should entice many others to enjoy the delights of surfing at the only beach near Sydney that is served by railway."

## WESTERN AUSTRALIA

### Financial Results for Half Year Ended December 31, 1939

The report of the Commissioner of Railways for the quarter ended December 31, 1939, discloses the following results of the six-monthly period of the current financial year then ended, as compared with the corresponding periods of 1937 and 1938.

Six months ended December 31			
	1937	1938	1939
Earnings ... ..	1,725,000	1,756,600	1,766,300
Working Expenses ... ..	1,344,852	1,511,896	1,479,075
Net Revenue ... ..	380,148	244,704	287,225
Interest ... ..	507,950	501,000	511,900
Loss ... ..	127,802	256,296	224,675

The result was £31,621 better than in the previous corresponding period, due to savings in expenditure, wherever possible, by the exercise of rigid economy. In effecting economies, every effort is being made to avoid retrenchment of staff, but where employees are retired on account of age or for other reasons and it is possible through the decline in business to spread the work, this is done and fresh appointments thereby obviated.

The dearth of shipping during the quarter had a telling effect on the earnings. In wheat haulage alone there was a diminution of 40,000 tons in December last compared with December, 1938.

The decline in traffic has necessitated

careful overhaul and analysis of train schedules, and wherever possible trains have been eliminated to meet the position, although an adequate service has been retained to cope with all business on both the passenger and goods sides. As a result of this overhaul, train mileage for the past quarter was 107,535 miles less than for the same period of 1938.

#### New Industrial Award for Enginemens' Union

A new industrial agreement between the Railway Department and the Locomotive Engine Drivers', Firemen's & Cleaners' Union was completed during December, and was presented to the Arbitration Court and issued as an award operating from January 4, 1940. The principal variation compared with the old award was an increase of 3s. a week to drivers-in-charge, and also to first class drivers with over five years' service in that grade. In a few other instances amendments in the conditions asked for by the department and the union were agreed to, and these were embodied in the award. The financial effect of this new award will not be great.

#### New Lorry Weighbridge at Perth

After the collapse through overloading of a cart or lorry weighbridge in the Perth goods yard recently, it became necessary to instal a new bridge, and to meet the modern requirements of larger loads, a new machine has now been installed at an approximate cost of £800. The new machine is the largest in the State and is capable of weighing up to 21 tons, and of accommodating the largest motor vehicles now in use. It is self-contained, and dispenses with loose weights. Except the structural steel, the whole machine was designed and built in Western Australia by the Worthington Scale Company.

## ITALY

### Wireless Communication with Trains

The State Railways administration is completing experiments in connection with the establishment of wireless connections between running trains and stations. The wireless equipment is fitted in a luggage van, and includes a receiving and a transmitting set. They have a radius of 100 km. and are adjustable to three wavelengths between 25 m. and 978 m. There is also a compartment equipped with two telegraph instruments and several telephones, by means of which, when the van is stationary and connected with the ordinary telegraphic and telephone lines, it can be used as a station telegraph and telephone office.

These facilities will shortly be placed at the disposal of the travelling public, enabling passengers to converse from trains with business houses or friends. The scheme also enables official orders to be given to running trains, transmitted by the wireless stations which

will be provided at the principal railway stations of the State Railway system.

## DENMARK

### Ice and Mine Trouble for the Ferries

In continuation of the information concerning the interruption to the various train ferries by ice, published in THE RAILWAY GAZETTE of March 22, it may be noted that on March 17 the Lyntog services were reintroduced according to the timetable of January 15, after having been stopped completely since January 20. On the next day severe snowstorms and several floating mines caused the suspension of the Great Belt ferry traffic during the dark, and the evening Lyntog in both directions was suspended. On March 19 the four diesel ferries were held up by ice. The three westbound ferries were released by ice-breakers during the course of the day, but the eastbound ferry was not released until the following day. The Great Belt traffic was carried on with some delay on March 20, but on March 21 was again entirely suspended due to ice. There was still a large amount of heavy ice in the Baltic and the southern Danish waters, and further disorganisation of services was expected.

The next day (March 22) traffic was nearly normal, but since March 23 all traffic across the Belt has been suspended during the hours of darkness because of various mines found embedded in ice-floes and the impossibility of carrying out an effective patrol service under these conditions, especially as the work has been hampered by lengthy periods of fog during the intervals of thaw. On March 28 it was officially announced that until further notice all traffic across the Great Belt would be suspended every night between the hours of 10.30 p.m. and 5.30 a.m., and that the crossing would even be closed at 7 p.m. if weather conditions were such that an effective search for floating mines in the vicinity of the crossing had not been possible immediately before nightfall. Many of the connecting trains have had to be withdrawn, the exception being the evening Lyntog towards Copenhagen, which is being run as far as Nyborg even if the crossing is closed at 7 p.m.; the evening Lyntog in the other direction is cancelled in this case.

### Return Easter Traffic Seriously Delayed

In order to relieve the Great Belt crossing, several extra trips after nightfall were scheduled to take place between Kalundborg and Aarhus in order to assist returning Easter travellers. On March 25 these extra trips had to be given up because of floating mines observed on the route.

In consequence, the heavy return traffic towards Copenhagen just after Easter was most seriously impeded and delayed, but the arrears of passenger traffic had been caught up by March 28. This was not the case with the goods

traffic, which had again begun to accumulate because of the partial closing of the Great Belt, and it has once again been necessary to suspend temporarily the acceptance of ordinary slow goods for transfer across the Belt. The Easter traffic from Copenhagen has been about 20 per cent. lower than last year.

The remaining ferry services were working more or less regularly during the last week in March, although the Gedser—Warnemünde service had to be suspended one day because of fog, but there were considerable delays between Helsingør and Helsingborg on March 28. These crossings are still worked to a temporary timetable with less than the normal number of journeys, and on all the ferry services except that between Kalundborg and Aarhus only a very limited number of motorcars can be transferred.

Work on the doubling of the Brørup—Bramminge section of the Fredericia—Esbjerg main line has been discontinued because the necessary rails have not been forthcoming. [This letter was written before the German invasion of Denmark. Later messages report that one of the Nyborg—Korsør ferries struck a mine in the Great Belt.—Ed., R.G.]

## SWITZERLAND

### New Holiday Season Tickets

As a contribution towards the general effort to stimulate tourist traffic in Switzerland despite the lack of foreign visitors, the railways have decided to introduce a new type of season ticket, which will be on sale from May 1 to October 31. The ticket, costing fr. 9, will entitle the holder to travel at half-fare to a holiday resort and back, subject to a minimum stay of five days, and to five tickets at half-fare for excursions from the resort or from intermediate points *en route*. The normal validity is 10 days, but three seven-day extensions can be obtained on payment of fr. 3. every time, every extension providing for three additional excursions at half-fare. A further facility is that children accompanying the ticket holder are carried free under 6 years (instead of 4), and at half-fare from 6 to 16 (instead of 4 to 12).

### Easter Traffic

Receipts during the Easter holidays were higher than last year, as far as internal traffic was concerned, on account of the remarkably warm and fine weather and excellent snow conditions for ski-ing; there was no traffic from abroad. The six largest stations ran 395 special trains and 546 empties, or a total of 268 more than the previous Easter. The total receipts on the Federal Railways amounted to about fr. 3,563,000 for internal Swiss traffic. The Lake of Lucerne district and Canton Tessin (Lugano and Locarno) were specially favoured, and there was heavy traffic on the Gotthard route. Many of the private concerns also reported

increased numbers of visitors, the Rigi Railway, for instance, carrying nearly 2,000 passengers from Thursday to Monday, against some 1,600 last year, and the steamers on the Lake of Lucerne 37,158 as against 28,489.

## NEW ZEALAND

### Improvements at New Plymouth

At New Plymouth, the principal West Coast port of the North Island, comprehensive improvement works are in hand. Works already completed include siding extensions on the seaward side of the passenger yard and their connection with the main line, thus providing two long sidings to enable goods trains from the breakwater to be despatched direct from these sidings; also the provision of an additional scissors crossing enabling locomotives to have direct access to the locomotive depot, thereby increasing the standing room in the yard for cars and wagons.

Work is in hand upon the reconditioning of the service backshunt alongside the sea-wall at the Wellington end of the station, to enable it to be used for the storage of wagons as well as for shunting purposes. A new goods shed, 315 ft. by 35 ft. is also being built. Equipment for the goods shed and yards will include mobile and stationary cranes and other mechanical aids, a new 25-ton weighbridge, the most modern lighting and signalling, and all other necessary facilities. Early developments at the breakwater include the provision of marshalling sidings, the building of five new loop sidings near the main line, the provision of a backshunt with weighbridge-loop and the acquisition of additional land.

## SPAIN

### The Railways in the Civil War

In an address delivered in Madrid on April 5 to the National Falangist Council, Sr. Eugenio Calderon referred to the disastrous effect of the civil war on the Spanish railways. Financially, the companies had reached a desperately critical stage in 1936, owing to the disorganised state of industry generally, and to the onerous social legislation. During the civil war the railways in the Republican zone suffered severely, not only from military operations but from neglect and misuse, and much damage was done to bridges and other fixed plant in the retreat. As regards the rolling stock, Sr. Calderon quoted official figures. Of 2,917 locomotives existing in 1936, only 1,158 remained at the end of the war; of 74,260 wagons only 50,130 remained; and of 3,896 carriages, there were only 1,503. For the great work of reconstruction, general co-ordination of all forms of transport, under a central control, is intended. Meanwhile the shortage of rolling stock must be quickly made up if industrial progress is not to be irretrievably hindered.

## THE OUTDOOR MACHINERY DEPARTMENT—V\*

*Notes on the constitution, duties, and relationships with other departments of the Outdoor Machinery Department of a British main-line railway*

*By J. DALZIEL, formerly Assistant Electrical Engineer, L.M.S.R.*

COMPLETED plant passes over to the charge of the maintenance section of the O.D.M. Department. With maintenance, headquarters staff is only concerned as regards the chief officers of the department. In evolving new schemes, however, the headquarters engineers should make contact with and obtain any requisite local information, and, if necessary, estimates concerning work on site, from the local officer; the latter should also always be informed and consulted as to proposals arising in his area.

There are various ways in which O.D.M. maintenance work and its supervision may be organised. In the early days, especially before locomotive running and the officers and staff connected therewith were attached to the Traffic Operating Department, it was one of the responsibilities of the District Locomotive Superintendent. Under him at the larger stations there was a foreman, usually rated as hydraulic foreman; generally there was no suggestion of associating O.D.M. with locomotive work, and on some railways even in the earlier days the O.D.M. Department was kept independent of locomotive work to an even greater extent than just indicated. The headquarters millwrights' foreman or his assistants also spent a great part of their time in supervision of maintenance outside, and most of the heavier repair work was done by men from headquarters millwrights' shop; in this way staff at outside stations was kept down in numbers to just sufficient for everyday routine maintenance. This worked fairly well, the Locomotive Superintendents having sufficient knowledge of the O.D.M. work to enable them to direct it and the staff concerned with it; at the same time their primary duties and the gauge by which their efficiency was measured were those of their locomotive work.

### Combination of Electrical with Mechanical Maintenance

When supervision of electrical work, of which few Locomotive Superintendents had any knowledge, was added to their responsibilities, the situation became more difficult, as obviously they were put in the position of having to act on what they were told by subordinates without being able to check its accuracy. With the transfer of their primary allegiance and source of promotion to another department it was natural that their responsibilities towards the C.M.E. Department should take a secondary place; this, with a difficulty in obtaining efficiency, except in the case of a few exceptional men, was actually experienced. Obviously it is just as important to the Traffic Operating Department that their traffic loading and handling machinery should be in order as that their train handling plant should be so. There is the further consideration that whereas locomotives which break down can be replaced by others speedily, in most instances a broken-down crane, capstan, or lift, must be itself brought back into service before normal working can be resumed.

If full efficiency in maintenance of outdoor machinery is to be achieved the only way is, in the writer's view, to put it in the charge of local officers responsible solely to

O.D.M. headquarters, and to avoid investing officers with multiple and mutually distracting responsibilities. Especially if responsibility for the maintenance of electric parts of machines be combined with that for mechanical it should be easy so to delimit areas as to provide ample work for the full-time occupation of an O.D.M. engineer and his staff.

Such an engineer should have electrical training, otherwise he will be in the position of having to accept his subordinates' views, and perhaps to forward them to headquarters, without being able to check them. It is not, however, necessary for him to have so wide or so flexible a knowledge of electrical work as is essential to the full efficiency of his headquarters colleagues. As the number of machines with which he has to deal is limited, if he has sound engineering instincts he will probably acquire a knowledge of them and their characteristics individually, sufficient to ensure to them adequate and efficient attention. From that point as he works out the reasons underlying their behaviour in particular circumstances he may go on to attain to quite sound electric intuition and knowledge.

### Subordinate Staff

As regards subordinate staff the writer has no experience of any attempted combination of locomotive with O.D.M. and electric duties, nor can he conceive of any such combination being proposed by anyone qualified by knowledge to do so. The several classes of work are radically different, require a different outlook on the part of the men concerned and have to be done under different conditions. It is impossible to fit them into a roster to which there is any hope of adherence, as special circumstances must constantly arise with one or other classes of work, enforcing the neglect of the others for the time being. The predominant work, and that with which such a man must feel his own interests are mainly bound up, will in most cases be the locomotive, and where it makes a demand out of course the other classes must suffer.

### Combined Maintenance Unsatisfactory

An equally unsatisfactory situation is that in which plant is maintained mechanically by one department and/or set of men and electrically by another. No more in maintenance than in new work can an electrically operated machine be regarded as made up of separate and independent electrical and mechanical entities. On the contrary, the condition of each seriously affects the other, and neither can be maintained efficiently except in respect of the part it plays in the operation of the machine as a whole. To take simple examples, a lift gate may be in a state of maintenance justly regarded from the mechanical point of view as entirely satisfactory, but such as to make the electric locks which, actuated by its operation, safeguard it and the lift, quite unreliable; a slipping clutch may be so adjusted mechanically as to put it out of action for its purposes electrically. For any proper attempt at adjustment electrical and mechanical co-operation is essential. In the same way electrical adjustments must have regard to their effect on mechanical operation.

Numerous other examples could be cited and will occur

\* Previous articles appeared in our issues of March 1, 15, 29, and April 12



to any informed reader in respect of nearly every class of electrically operated machine, and in fact, where two-department responsibility is in force, results can be satisfactory only with the establishment of mutual accommodation and understanding, without which even safety may be affected. In any case it is illogical for responsibility for one machine to be divided between two independent departments and puts serious obstruction in the way of fixing any responsibility at all. It is far preferable that electrically driven machinery should be the responsibility of one department and one set of men. This is of more importance than the question of what department and men should have this responsibility.

Where the O.D.M. and Electrical Departments are one, the question becomes one of personnel. If, as should be, both mechanical and electrical maintenance work is to be done by the same staff, as some electrical knowledge would appear essential and all electrical men must have some mechanical knowledge, it would appear that such men should be used. The best of them undoubtedly would efficiently carry out both classes of work, but despite a modicum of mechanical experience, high-class mechanical maintenance could not well be entrusted to second rate electrical men, particularly those whose experience has

been mainly in work of the wiring type. On the other hand, it should be possible for good class mechanical men to acquire sufficient knowledge of the routine electric requirements of the limited number of individual machines in their districts to enable them to combine electric with their mechanical maintenance duties. Only the best of them will be able to rise to the occasion and know what to do under emergency conditions; to a great extent it is for their probable behaviour in such conditions and not for the efficiency of their day-to-day work that such men, whether electrically or mechanically trained, should be selected. Important electrical maintenance certainly should not be entrusted to any man without some assurance of at least general knowledge on his part of what is placed in his power. A machine may, for example, be found to work better with some of its safety interlocks out of action, or a breakdown may be remediable by putting them out of action, and so they may be left with serious and perhaps dangerous results when the conditions arise to guard against which the interlocks had been provided. There are other directions in which good intentions may have had consequences; it is largely a question of acquiring instincts.

(To be continued)

### Federated Malay States Railways

THE main line of the Federated Malay States Railways runs from Singapore in the south to the Siamese frontier, 580 miles from Singapore. From Gemas (a junction 137 miles from Singapore) the East Coast line proceeds northwards for 328 miles to the port of Tumpat in Kelantan. There is also a line of 11½ miles from Pasir Mas (Kelantan) to the Golok River at the Siamese boundary. Branches connect the west coast ports with the main line. The route mileage is 1,068 on the metre gauge, and 17 miles 35 chains are double track. The administration also operates steam ferry services, provides road transport services, and manages wharves. In Malayan currency \$1 = 2s. 4d. Rubber and tin are the principal products of the territories served by the railways, and in the year 1938, on which we have received the report by Mr. L. M. Smart, C.B.E., the General Manager, the severe reduction of the quotas on these products led inevitably to a restriction of trade generally. The previous year was the best for seven years and provided record tonnages of these staple commodities. In the circumstances, the decrease of \$1,905,315, or 12½ per cent., in railway gross revenue in 1938, the report says, is not unsatisfactory, although railway expenditure had increased by \$683,113, or 6.2 per cent. The gross revenue from the combined services, that is, railways, wharves, and ferries, amounted to \$14,685,567, against \$16,812,650 in 1937, and expenditure on all services was \$11,871,441, compared with \$11,598,842. Expenditure includes pensions, road services, and upkeep of rentable property. Appropriating \$2,086,216 to renewals fund, a surplus remains of \$116,481, from which \$11,875 is due to the Johore Government as the proportion of the revenue earned on the Johore State Railway, which is worked by the administration. The balance of \$104,606 is carried to renewals fund. The net operating ratio for the year (*i.e.*, excluding contribution to renewal and special service works) was 81 per cent., compared with 69 per cent. in 1937.

Passengers increased in number from 9,476,678 to 9,922,688, but as this increase was due entirely to journeys at reduced fares, the effect was a reduction of \$411,170 or 8.5 per cent. in receipts. Goods tonnage was 1,849,703, or 384,120 tons less than in the previous year, a fall of

13.33 per cent., and this was accompanied by a decrease of \$1,319,638, or 15.97 per cent., in the receipts. The most important traffics were rice, petroleum products, and rubber, and all these commodities decreased in tonnage. Coal and coke also decreased, but other minerals showed a good increase. The value of imports into Malaya during 1938 was 20 per cent. less than in 1937, so the reduction in tonnage was to be expected. The reduced spending power of the population lessened demand for non-essential foodstuffs, clothing, and so forth.

The deficit on road motor services increased to \$4,575, from \$2,211 in 1937. Net revenue from wharves declined to \$378,937, from \$557,404 in 1937, and in the same way there was a reduction in the net revenue from ferry services to \$36,804, from \$71,018. Revenue-earning train mileage was 4,280,982, compared with 4,248,623 in 1937. Railway working expenses were higher by \$683,113 (6.22 per cent.). Maintenance of way and works (\$2,139,767) showed an increase of \$163,967, or 8.3 per cent., due to the execution of certain arrears held over from previous years. Important improvements were effected in station and other buildings at Kuala Lumpur. The amount charged to maintenance of rolling stock, \$2,240,981, was \$252,308 higher, or 12.7 per cent., the result of higher wages and improvements to passenger vehicles (air-conditioning, etc.) and conversion of other types of rolling stock. Transportation (locomotive running and traffic) expenses were \$4,635,157, that is \$116,833, or 2.6 per cent. higher. The operating ratio on the railway service was 87.4 per cent., whereas it had been as low as 72 per cent. in the previous year.

In the accompanying table are shown the financial results of the combined undertaking:—

	1937 \$	1938 \$
Passenger receipts ... ..	4,822,959	4,411,789
Goods receipts ... ..	8,263,019	6,943,381
Total railway receipts ... ..	15,262,388	13,357,073
Railway working expenditure ... ..	10,985,823	11,668,936
Surplus ... ..	4,276,565	1,688,137
Railway renewals fund ... ..	1,990,301	1,987,397
Railway net revenue ... ..	2,286,264	Dr. 299,260
Wharves and ferries (net) ... ..	628,422	415,742
Total net revenue ... ..	2,914,686	116,482

## ONE-MAN STEAM LOCOMOTIVE OPERATION

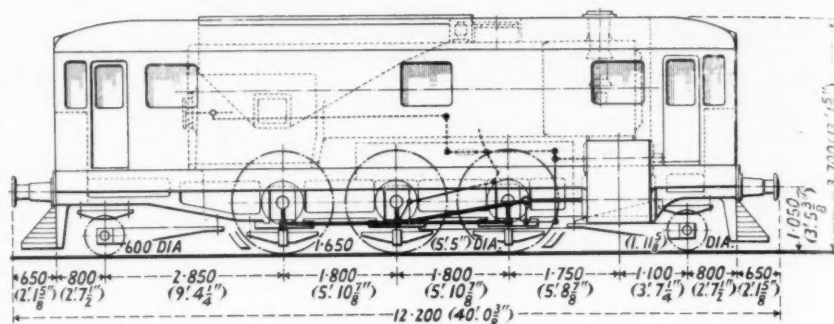
*Details of locomotives built for one-man operation  
on the Langenthal-Huttwil Railway of Switzerland*

(See illustrations on opposite page)

THE Langenthal-Huttwil Railway, situated in central Switzerland, operates also the Huttwil-Wolhusen line and forms a cross country link between Berne-Olten (Basle) and the direct Berne-Lucerne lines of the Swiss Federal Railways. It has gradients up to 1 in 44 for 4 miles on end. On this section of railway most of the services are worked by steam tank locomotives fitted with semi-automatic stokers and capable of being driven from either end by one man. In 1930 the Swiss Locomotive and Machine Works at Winterthur constructed for this line two small 0-4-0 type locomotives with enclosed boilers, outside cylinders  $13\frac{3}{4}$  in. diameter by  $17\frac{3}{4}$  in. stroke, and wheels 3 ft.  $4\frac{1}{2}$  in. diameter. The boiler carried a working pressure of 170 lb. per sq. in. and with the superheater provided a total heating surface of 397 sq. ft.; the grate area was 8.2 sq. ft. In working order the locomotive weighed 26 tons and exerted a maximum tractive effort of 9,945 lb.; the maximum running speed was 34 m.p.h. The locomotives were required to haul a train of 60 tons weight at a speed of  $12\frac{1}{2}$  m.p.h. on a gradient of 1 in 36, and their normal indicated h.p. output at a speed of 22 m.p.h. was about 250 h.p. In actual service, however, this output was often considerably exceeded.

Later, in 1936, a larger and more powerful locomotive of a similar general type but having six coupled wheels was placed in service. This has cylinders  $15\frac{1}{2}$  in. diameter by  $21\frac{1}{2}$  in. stroke, and wheels of the same size as before, namely, 3 ft.  $4\frac{1}{2}$  in. diameter. The boiler is of larger proportions and carries a working pressure of 185 lb. per sq. in. The heating surface of the firebox and tubes is 738 sq. ft. and of the superheater 222 sq. ft., and the grate area is 17.2 sq. ft. The locomotive exerts a maximum tractive effort of 18,323 lb. and its weight in working order is 40½ tons. The maximum running speed is  $37\frac{1}{2}$  m.p.h. and the indicated output of the locomotive 600 h.p. As in the case of the four-coupled engine, the locomotive is fitted with an automatic stoker, and it has also a feed water cleaner which increases the intervals of washing out the boiler to about two months. The equipment includes an automatic piston-operated feed pump combined with a pre-heater. The fuel consumption and the maintenance costs have proved very low for both the four-coupled and six-coupled locomotives. For the latter the coal consumption for a total mileage of about 94,000 miles averages about 33.5 lb. a mile, which is low considering that in addition to its service on the Huttwil-Wolhusen line, this engine generally hauls trains of 150 to 200 tons on the hilly section of the Langenthal-Huttwil line, the latter service representing about 65 per cent. of the daily working.

In a communication we have received from the Swiss Locomotive and Machine Works, it is suggested that locomotives of this type, operated by a driver alone, have a



Proposed 2-6-2 locomotive for operation from either end by one man

larger future than that of working on branch lines and may be of interest for certain main line purposes. The Winterthur firm has made extensive studies of such locomotives, some fitted with individual axle drive.

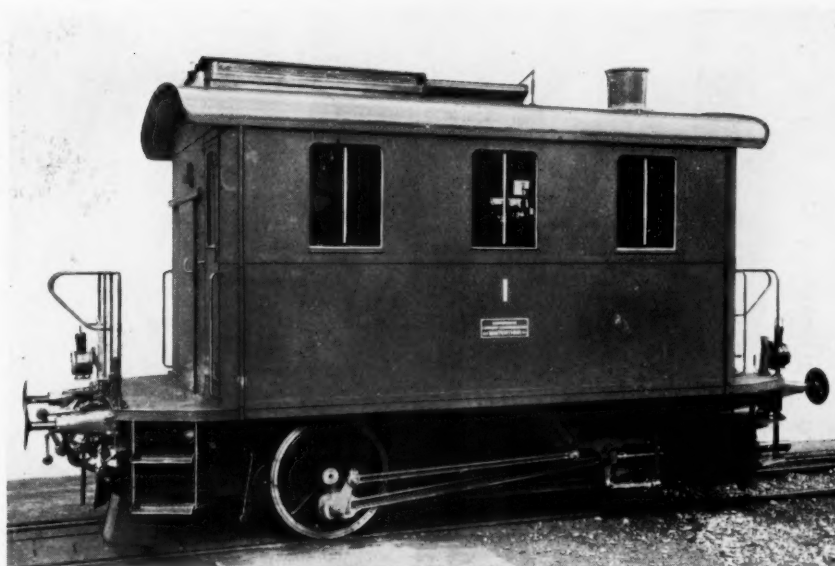
The above illustration shows a proposed 2-6-2 type locomotive considerably more powerful than those already in service on the Langenthal-Huttwil Railway, but is still of the either-end type and operated by one man.

### Belgian Speed Enterprise in Wartime

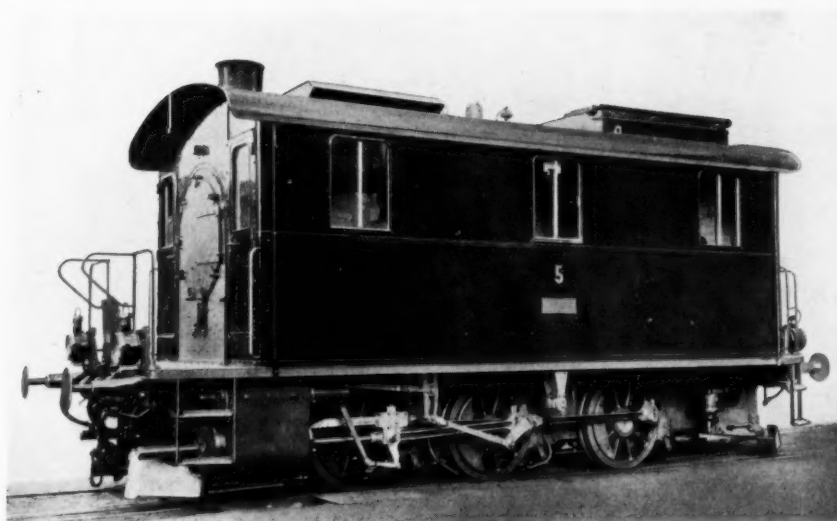
Notwithstanding war conditions, it is encouraging that countries bordering on those of the belligerents are continuing their speed progress. Reference has been made in THE RAILWAY GAZETTE to acceleration of the Italian electric *Rapidi* between Milan, Rome, and Naples, and of the Danish *Lyntog* diesel trains, although the latter are now reported to have been withdrawn since the German occupation. From the middle of March, similarly, the Belgian National Railways have not only reinstated one in each direction daily of the Brussels-Ostend 60-min. flyers, with their 74.9 m.p.h. schedules between Brussels and Bruges (described in detail in the March 15 issue), but also have introduced the promised 60-min. service between Brussels and Liège, leaving Brussels Nord at 8.30 a.m., and returning from Liège at 5.30 p.m. As compared with the 71.0 miles from Brussels Midi to Ostend, the distance from Brussels Nord to Liège is only 61.7 miles, but the running conditions are very different. Owing to reconstruction works between Brussels and Schaerbeek, temporary tracks, over which a speed reduction is enforced, must be used, and then comes a 6-mile ascent at 1 in 200. There is a severe service slack through Louvain, and for 40 miles from Louvain to Ans the line is chiefly rising, with a final 15 miles up at 1 in 220-250. At the conclusion comes the formidable Ans incline, for 3 miles almost entirely at 1 in 25-30 down, requiring the utmost caution in its descent, and facing the Brussels-bound train as a gruelling climb immediately on leaving the Guillemins station at Liège. The previous best schedule of 75 min. is thus being cut by 15 min. with these enterprising schedules.



*Above: 2-6-2 locomotive for operation by one man hauling a mixed train on the Langenthal-Huttwil Railway of Switzerland*



*Right: 0-4-0 locomotive, Langenthal-Huttwil Railway, designed for one-man operation*



*Left: 0-6-0 locomotive designed for one-man operation and built by the Swiss Locomotive and Machine Works, Winterthur, for the Langenthal-Huttwil Railway*

ONE-MAN STEAM LOCOMOTIVE OPERATION IN SWITZERLAND  
(See article opposite)



## The Lapland Iron-Ore Railway in its Steam Days

(See editorial note on page 591)



*A mixed train entering Polcirkeln station in the late 'nineties*



*Railway station at Narvik in 1912*



*Scenes on the Norwegian section of the iron-ore railway. The views were taken in 1912, and therefore prior to electrification*

## NEW REFRIGERATOR CARS, CANADIAN NATIONAL RAILWAYS

*A first order was placed with the C.N.R. workshops for 100 all-steel overhead ice-bunker and charcoal-heated perishables vans which have proved very efficient on trial*

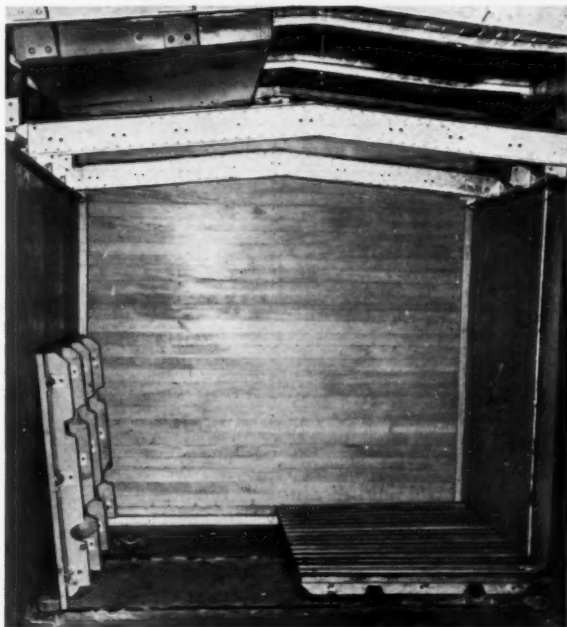
AT the Transcona workshops in Manitoba, the Canadian National Railways are now building 100 overhead-iced refrigerator cars, which also can be heated with permanent charcoal heaters fitted below the underframes. Allusion was made to these cars in the Overseas columns of our issue of January 23 last, and it may be remembered that a car of this type was therein reported to have proved so efficient that the temperature of a 26-ton test load varied in the course of a trial run of 1,300 miles

by only 1° in October last. It is noteworthy that liquid meters are fitted, showing the temperature at floor and ceiling, so that temperatures can be checked *en route*.

This new design of car has a steel body, instead of the wooden type formerly used, and in place of ice bunkers at the ends there are eight overhead ice tanks ranged along the ceiling and extending almost the full length and width of the car. For certain perishable commodities requiring a warm temperature there are permanent charcoal



*Left: Exterior of car. Above: Roof of car showing eight ice-tank hatches above the overhead tanks spread over the length of the car*



*Interior of car showing internal steel framework, five-ply fir lining, and hinged floor racks*

heaters attached to the underframe, and connected to heating coils laid above the floor. These can be controlled readily from the ground.

The new cars have an interior steel framework carrying the ducts, lining, tanks and meat racks; the lining consists of five-ply fir panels. There are 4 in. of Hairinsul insulation at the sides and ends, and 5 in. in the floor and roof. A special feature is that in the floor and roof every layer of insulation is in one piece extending the full length and width of the car, and, similarly, in the ends and sides continuous layers extend from one door post along the side to the end, across the end, and onwards to the opposite door post. Also, to avoid compressing the insulation by clamping it, there are special barbs in the framework from which the insulation is suspended.

Another new feature is a cadmium-plated steel floor laid in sections with expansion joints; pressed gutters and traps at each corner afford adequate drainage. This floor is fixed to the interior framework at the sides of the car only, so that it forms a pan without any fastening to the wooden sub-floor. All supports for the floor rack hinges and heating pipes are welded to the floor sheets.

Over each of the eight ice tanks is a hatch, the frame of which is an integral part of the roof sheets. In place of the former hatch plug and cover, a unit design of cover and plug with a resilient air-tight sealing gasket is provided, along with an improved operating mechanism insuring a perfect seal. The tanks, ducts, and drip-pans have a Promat flexible vitreous enamel finish, but all other metal parts are heavily galvanised. The doors, which are of

steel and insulated with Hairinsul, have self-locking hinges and ducts for air circulation.

The overhead ice tanks occupy much less space than the end bunkers, allowing of considerable additional loading space, and the natural ceiling to floor circulation from these tanks insures the maintenance of a lower and more even

temperature. Less ice is also consumed, reducing the number of re-icings in transit, and in cold weather a proportion of the ice tanks only may be used as required.

The new cars were designed by Mr. J. Roberts, Chief of Motive Power & Car Equipment, Canadian National Railways.

## NEW MACHINE TOOLS AT DONCASTER WORKS

### *Kendall & Gent heavy duty milling machines in L.N.E.R. locomotive shops*

**T**WO heavy duty milling machines, built by Kendall & Gent (1920) Limited of Manchester, have recently been installed in the Doncaster locomotive works of the L.N.E.R., and by the courtesy of Sir Nigel Gresley, Chief Mechanical Engineer, we are able to reproduce the photographs and give the particulars which follow.

The first machine is the Kendall & Gent Plano milling machine, which has one vertical milling head, independently driven by a 12 h.p. variable speed reversible motor. The motor variation of  $3\frac{1}{2}$  to 1, used in conjunction with a high and low gear change on the head gives a total ratio of spindle speeds of 14 to 1. A dial speed-indicator showing the correct spindle speed is incorporated in the head. The final drive to the spindle is through high-efficiency worm and wheel.

Rapid power motions are provided to all traverses to facilitate the setting of the work. The cross slide carrying the milling head is elevated by a motor on the cross stay. Push button control stations are provided on each side of machine and all control levers are conveniently placed for the operator's use.

The machine is capable of operating on components 10 ft. 6 in. in length and 4 ft.  $\times$  3 ft. 6 in. cross section, and is well adapted for heavy duty work. It is used in the Doncaster works for face milling, edging and end milling of such details as nickel chrome connecting and coupling rods in pairs and bogie frame plates, engine foot-plates and general plate work in batches. The longitudinal traverse is supplied through the table and for end milling and gapping the lateral traverse is worked through the powerful cross slide traverse incorporated in the milling head of the machine.

A speed range of 12 to 168 r.p.m. and feed range for both table and milling head of  $1\frac{1}{4}$  in. to  $17\frac{1}{2}$  in. per min. are incorporated in the machine. The quick hand-and-power-traverse used to permit of quick setting of work is supplemented by an automatic stop for arresting the self-acting feed.

The push button control for operating the motor for elevating of cross slide, along with those for the stop and

start for speed feed and quick traverse engaging, are centralised on a pedestal control faceplate in the most convenient position for the operator.

### **A New Type Vertical Milling Machine**

The other machine is of the builder's latest type known as the C.V.M.40 type. The design and construction embody many special and distinctive features; the milling head and driving gearing form a complete unit, and nine spindle speeds are available through the gearing in progression of the cutter diameters from  $1\frac{1}{2}$  in. to 12 in., controlled by a single lever movement facilitated by colour control. Variable cutting speeds, obtained by means of pick-off gears, provide five distinct surface cutting speeds, suitable for different classes of materials to be machined. The table controls are conveniently grouped; the feed motion to the longitudinal and transverse movements are obtained through a gearbox on the table and controlled by hand levers with colour control. Electrical directional trips prevent any possibility of engaging conflicting motions. The base is of special box section with carefully distributed metal, and three surfaces to support the table; the narrow guide for the table is formed on the centre slide. The spaces between the outer slides form troughs for the removal of cuttings; chutes are provided on each side of the base.

This machine is used for machining medium sized details required to be finished to fine limits including such work as Walschaerts valve gear parts. It is equipped with micrometer adjustment, automatic lubrication and limit switches. Included in the machine's equipment is a 2-ft. dia. power driven circular table which facilitates the processing of a large variety of work.

A power driven head elevator is utilised; all actions are power driven and the machine incorporates the selector type of lever for engaging correct cutting speeds which contribute greatly to ease of handling the machine. The table capacity of this machine is 6 ft. 6 in.  $\times$  1 ft. 11 in. and the maximum height admitted between spindle nose and table is 2 ft. 2 in.

### **Central Line Modernisation Completed**

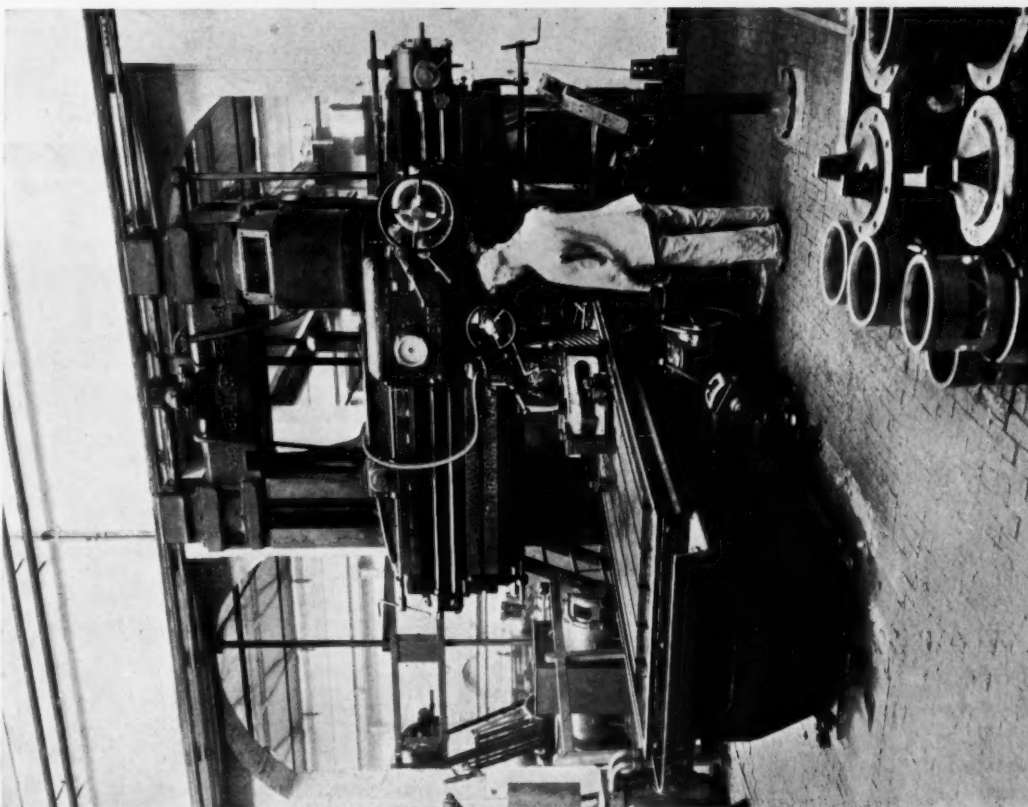
One of the largest and most difficult works undertaken in connection with the new works programme of the London Passenger Transport Board, the modernisation of the Central Line, has been practically completed. The task was begun  $3\frac{1}{2}$  years ago and most of the work has had to be done in the  $3\frac{1}{2}$  hours of the early mornings when traffic is suspended. The first section of the Central Line was opened in 1900, and was constructed with only one current rail, the return traction circuit being through the running rails. The other lines of the board have a second current rail for this purpose, with the result that the Central Line had to have special stock and a special over-haul depot. It was therefore decided to convert the track to the standard system before the line was extended in November next over the L.N.E.R. to Loughton and

Hainault, by way of Woodford Junction, and in February, 1941, over Great Western to Greenford.

It was found that in many places irregularities in the alignment of the tunnels would have to be straightened to make sufficient clearance for the fourth rail, and in such places this has necessitated removing the upper segments of the cast-iron lining, digging out the ground behind, and replacing the segments before the first train was due the same morning. Twenty-nine gangs of miners were employed on this work for 15 months.

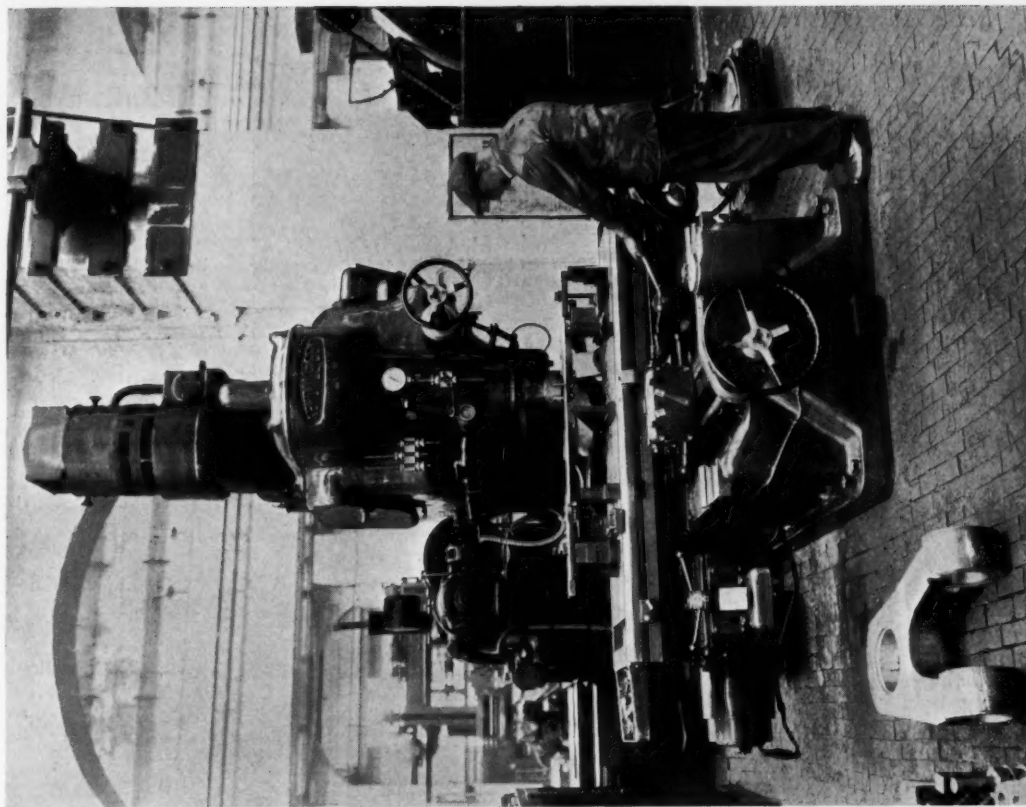
All platforms have had to be lengthened by 102 ft. to accommodate longer trains, and at Shepherds Bush and Bank, where the ground is water-bearing, this work had to be done under compressed air. In addition the old track carried on longitudinal sleepers has been replaced by standard track supported on cross sleepers.





*Kendall & Gent Plano milling machine in Doncaster works, L.N.E.R.*

**NEW MACHINE TOOLS AT DONCASTER WORKS**  
(See article opposite)



*Latest type of Kendall & Gent vertical milling machine at Doncaster, L.N.E.R.*

## British Railways and the War—16



*Above: A part of the cafeteria for the staff at the Aldermaston huts, G.W.R. The kitchens and service counter are at the far end of the building*



*Right: A corner of one of the new buildings forming part of the G.W.R. emergency headquarters at Aldermaston. The small arrows on the picture show the doors to rooms reserved for departmental assistants*



*Right: The main office of one of the departments located in the new buildings of the G.W.R. emergency headquarters, Aldermaston*

## RAILWAY NEWS SECTION

### PERSONAL

#### AIR MINISTRY APPOINTMENTS

Sir Samuel Hoare, Secretary of State for Air, has invited Sir Charles Craven to join the Air Council as Civil Member for Development & Production. His new appointment will be whole time. Sir Charles will also be Chairman of the Air Supply Board, which will replace the existing Air Council Committee on Supply.

The Air Supply Board will be responsible under the Air Council for the production of aeronautical equipment and supplies, and will be composed of Sir Charles Craven (Chairman), Lord Riverdale (Deputy Chairman), Air Marshal Sir Wilfrid Freeman (Air Member for Development & Production), Air Marshal Sir Christopher Courtney (Air Member for Supply & Organisation), Sir Harold Howitt, Mr. E. J. H. Lemon, Sir Charles Bruce-Gardner, and Mr. Lindsay Scott (representing the Permanent Under-Secretary of State).

Sir Charles Craven, on taking up his appointment, has dissociated himself from the boards of Vickers Limited, Vickers-Armstrongs Limited, and all associated companies.

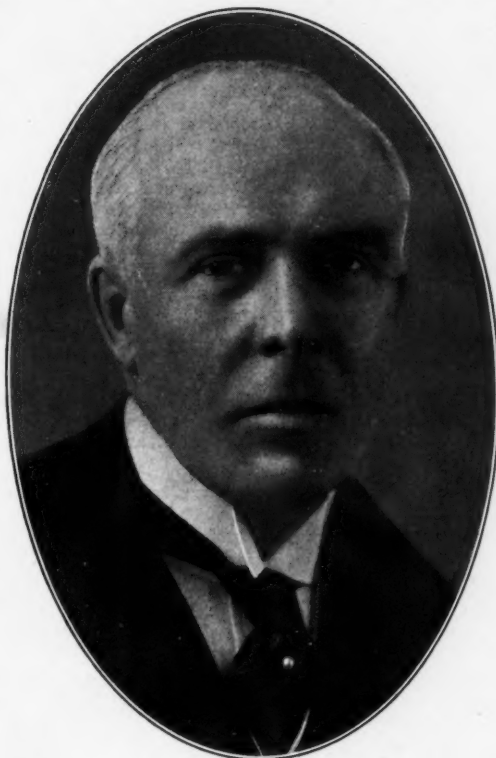
#### MR. E. J. H. LEMON

The present Director-General of Production, Mr. E. J. H. Lemon, who is a Vice-President of the London Midland & Scottish Railway, was lent to the Air Ministry two years ago to carry out a particular programme of production and to organise the production department. This important work has now been successfully accomplished, and the L.M.S.R. is anxious to have Mr. Lemon back. He is, therefore, returning to the railway, the Air Ministry having released him, but he will remain a member of the Supply Committee, so that his expert advice and knowledge will still be at the disposal of the Ministry.

#### SIR CHARLES CRAVEN

Vickers Limited announces that, in order that he may take up a Government appointment of national importance, Sir Charles Craven has been granted leave of absence from the Vickers group of companies. In consequence the following appointments are being made: Vickers-Armstrongs Limited, Mr. F. C. Yapp, Acting Chairman, and Mr. J. Callander, Acting Deputy Chairman. English Steel Corporation Limited, Mr. F. C. Yapp, Acting Chairman.

The Rt. Hon. Lord Ashfield of Southwell, who, as announced in last week's issue, has been re-appointed Chairman of the London Passenger Transport Board for a further period of seven years from May 18, was born at Derby in 1874, and went to the United States in his early years. He began his transport career with the



*The Rt. Hon. Lord Ashfield*

Re-appointed Chairman of the London Passenger Transport Board

Detroit Street Railway Company. With the introduction of electric traction, Albert Stanley, as he then was, abandoned the traffic side of the business to serve in the shops and study the electrical and mechanical sides of tramway equipment. He made good use of his opportunities and experience, and before attaining the age of 28 was General Superintendent of the tramway system of Detroit. In October, 1903, he was appointed Assistant General Manager of the Street Railway Department of the Public Service Corporation of New Jersey, and in February of the following year became Manager of that department. He was appointed General Manager of the Corporation in January, 1907, but resigned three months later in order to return to England on accepting, as from April 1, the general managership of the

Underground Electric Railways Co. of London Ltd. and its subsidiary companies, the Metropolitan District Railway and the three tube railways which were later amalgamated to form the London Electric Railway. Subsequently he became Managing Director, and held this office until his appointment as President of the Board of Trade in December, 1916. In August, 1919, he rejoined the Underground group as Managing Director and was also elected to the chairmanship. He received the honour of knighthood in 1914, became a Privy Councillor in 1916, and in 1920 received a barony with the title of Lord Ashfield of Southwell in the County of Nottingham. In May, 1933, he was offered, and accepted, the chairmanship of the London Passenger Transport Board for a period of seven years, and, as this period is now expiring, Lord Ashfield has consented to serve for a further seven years.

Mr. Gordon L. Whipple, General Superintendent of Transportation, Union Pacific Railroad, has been promoted to Assistant Vice-President in charge of operations, a newly-created position, with headquarters at Omaha, Neb.

Mr. A. C. Shields has been appointed Vice-President & General Manager of the Pittsburgh, Shawmut & Northern Railroad, with headquarters at Kittanning, Pa.

Mr. R. M. Paisley, Traffic Manager in charge of rates and divisions, Pittsburgh & West Virginia Railroad, has been appointed Vice-President in charge of traffic.

Mr. Arthur H. Cavanaugh, General Manager of the Temiskaming & Northern Ontario Railway, has been appointed Chairman of the board with headquarters at North Bay, Ont., in succession to Colonel Malcolm Lang, who has resigned. Mr. Cavanaugh is retaining his position as General Manager.

We regret to record the death at Quebec on March 29 of Mr. W. J. Atkinson, formerly Superintendent of the Cochrane division, Canadian National Railways. He retired on account of ill-health on February 1, 1939, and had lived since in Quebec, where he was at one time Superintendent of the Levis division.

During December, 1939, the two senior officers of the Mechanical Branch



**Mr. R. Dell**

Appointed Joint Signal Engineer,  
London Passenger Transport Board

of the Western Australian Government Railways, Mr. J. W. R. Broadfoot, Chief Mechanical Engineer, and Mr R. N. Johnston, Workshops Manager, reached the retiring age and severed their connection with the department. Both of these officers have had a long

connection with the Western Australian Railways, and take with them in their retirement the good wishes of the whole of the railway staff.

Mr. Broadfoot began his railway career in 1891 as an apprentice with the Western Australian Land Company, a private concern which was given a concession to build and operate a railway between Beverley and Albany on the Land Grant system. This railway was subsequently purchased by the Government, and Mr. Broadfoot was taken over with it. In 1898 he was promoted to draftsman, but in 1901 he left the service and went to sea, rising to the position of Chief Engineer. In 1906 he returned to the railway service, filling the positions of draftsman, engineering assistant, workshops manager, and finally, since 1929, Chief Mechanical Engineer. Mr. Broadfoot was closely associated with all branches of the service in his capacity as President of the Railways & Tramways Institute, which position he has occupied for the past eleven years. His successor as Chief Mechanical Engineer is Mr. F. Mills, who previously occupied the position of Chief Draftsman in the Mechanical Branch.

Mr. Johnston began his career as an apprentice in the railway workshops at Fremantle in 1891. Soon after finishing his apprenticeship he resigned, but rejoined the service seven years later. He filled various positions on the

**The late Mr. A. H. Hoyle**

Divisional Operating Superintendent, London (West),  
Southern Railway, 1923-1930

mechanical side, finally rising to control the railway workshops by his appointment as Workshops Manager in 1929. Mr. Johnston was a staunch fighter for improved workshops conditions for the staff, and was largely responsible for many amenities through the shops.



*Iron-ore loading jetty at Narvik, with hopper wagons propelled by steam locomotive discharging into two ships alongside*

Major, R. Falshaw Morkill and Mr. R. Dell have been appointed Joint Signal Engineers, London Passenger Transport Board, in succession to the late Mr. W. S. Every, reporting direct to the Chief Engineer (Civil), Mr. V. A. M. Robertson. Major Morkill has hitherto been Assistant Signal Engineer (Maintenance), and Mr. Dell Assistant Signal Engineer (New Works).

Mr. R. Dell was born on February 25, 1900, and was educated at the Polytechnic, Regent Street. He entered the service of the Signal Department of the London Underground Railways as an apprentice in November, 1915, and served with the Royal Army Service Corps in 1918. In 1922 he was appointed New Works Assistant in the Signal Department, London Underground Railways, and was responsible for the installation of the signalling on the line from Golders Green to Edgware. Mr. Dell was appointed Outdoor Assistant (New Works & Maintenance) in 1925 and was responsible to the Signal Engineer for all outdoor signalling work, including the installation of signalling on the Morden Line, the extension of the Piccadilly Line, and also the Western Extension of the Piccadilly Line. On the formation of the London Passenger Transport Board in 1933 Mr. Dell was appointed Assistant Signal Engineer (New Works) and was responsible for the signalling installations on the recent extensions of the lines to Barnet and also the Metropolitan Line improvements. In 1936 he was appointed an Officer of the board. Mr. Dell has been responsible for many improvements in the design of signal apparatus and has taken out a number of patents such as the ribbon storage train describer and the focussing arrangement for colour-light signals. He is an Associate Member of the Institution of Electrical Engineers, an Associate Member of the Institution of Mechanical Engineers, and a Member of Council of the Institution of Railway Signal Engineers.

The funeral of Mr. W. S. Every, a biographical note of whom appeared in our issue of April 19, took place at Golders Green Crematorium on April 16. Among those present were:—

*Family mourners:* Mrs. Morris and Mrs. Bray (Daughters); Mr. Edward Every (Brother); Mr. Morris and Captain Bray (Sons-in-Law); Mrs. Edward Every (Sister-in-Law); Mr. E. A. Every (Cousin).

*London Passenger Transport Board:* Mr. H. S. Chapman, Assistant Secretary, on behalf of the Chairman and Mr. Page; and Messrs. V. A. M. Robertson, Chief Engineer (Civil); H. J. Green, Deputy Chief Engineer (Civil); J. H. Condy, Assistant Chief Engineer (Civil); R. F. Morkill, Assistant Signal Engineer (Maintenance); R. Dell, Assistant Signal Engineer (New Works); S. G. Elliot, Lighting & Cable Assistant (Signal Dept.); W. H. Challis, Indoor Assistant (Signal Dept.); J. P. Hunter, Chief Draughtsman (Signal Dept.); H. Firminger and F. Rose, Resident Engineers (Signal Dept.); P. Hogben, Chief Clerk (Signal Dept.); J. Ablett and F. F. Baker, Chief Inspectors (Signal Dept.); S. A. Heaps, Architect; J. F. Woolcombe, Building Superintendent; F. C. Bentley and H. W. Clark, Chief Engineer's Dept.;

H. C. P. Havers, Permanent Way Dept.; S. Farrell, Representing Sectional Council No. 7, L.P.T.B.; T. J. Griffiths, Representing U.R.E. Horticultural Society; T. B. Oliver, Representing Signal Department's Sport's Club; W. S. Graff-Baker, Chief Mechanical Engineer (Railways); E. Graham, Mechanical Engineer (Maintenance); E. T. Brook, Superintendent of Rolling Stock; Evan Evans, Operating Manager (Railways); H. T. Hutchings, Superintendent (Indoor) (Railways); Alex. J. Webb, Superintendent (Outdoor) (Railways); Walter Smith, Divisional Superintendent (District & Piccadilly Lines); Walter F. Smith, Estate Department and representing Railway Convalescent Homes; G. G. Fisher, representing *Pennyfare*; W. A. Agnew, Late Chief Mechanical Engineer (Railways); J. P. Thomas, Late General Manager (Railways); J. R. Gay, Late Chief Store Supervisor; B. Murchison, Chief Store Supervisor.

*Representatives of the main-line railways and other companies included:* Messrs. L. Preston, C. H. Hills and F. Downs, Late L.N.E.R. Signal & Telegraph Dept.; F. H. D. Page, Signal Engineer, G.W.R.; K. Vining, representing Mr. Hallam, Southern Railway Signal Dept.; W. Wood, L.M.S.R. Signal & Telegraph Dept.; H. M. Proud, R. S. Griffiths, P. Whysall, and M. W. Shorter of the Westinghouse Brake & Signal Co. Ltd.; Mr. E. W. Challis, representing Mr. W. H. Powell, Director & General Manager, Westinghouse Brake & Signal Co. Ltd.; Messrs. J. Boot, General Railway Signal Co. Ltd., also representing the Institution of Railway Signal Engineers; F. L. Castle, Siemens & General Electric Railway Signal Co. Ltd.; A. Verdie, Craigpark Electric Cable Co. Ltd.; Raynar Wilson, British Insulated Cables Limited; W. Lang, Callender's Cable Construction Co. Ltd.; A. Nichols, General Electric Co. Ltd.; W. H. Swadling, Ericsson Telephones.

We regret to record the death, at the age of 75, of Mr. Alfred Hooper Hoyle, formerly Divisional Operating Superintendent, London (West), Southern Railway. Mr. Hoyle began his career with the London & South Western Railway in the Station Superintendent's office, at Clapham Junction. Four years later he was transferred to the London Superintendent's office and then to that of the Superintendent of the Line. During this period, which covered 20 years, Mr. Hoyle obtained wide experience in various departments. For some time, he was Stationmaster at Wimbledon, and later relieved the Main Line and Central District Superintendents, until, in December, 1910, he became District Superintendent in charge of the Western District, at Exeter. In November, 1923, Mr. Hoyle was appointed Divisional Operating Superintendent, London (West), Southern Railway, and held this position until his retirement in March, 1930.

The board of directors of Richard Thomas & Co. Ltd. announced on April 18 that, consequent upon a decision of the Control Committee, Sir William Firth has ceased to be a Director of the company.

Mr. Harold Duke Smith whose death we recorded in our issue of March 1, has left estate valued at £4,701 (net £4,473). Mr. Smith was Divisional Engineer, Plymouth, Great Western Railway, from 1909 to 1927.

We regret to record that Flying Officer Nigel Stuart Graeme, B.A., who was Assistant Sales Representative in Scotland for British Timken Limited,

from September, 1938, until the outbreak of war, has been killed in an aircraft accident in France. He joined British Timken Limited in 1937 and passed through the works and the technical department before taking up his position in Scotland.

The Postmaster General, the Rt. Hon. W. S. Morrison, M.C., K.C., M.P., has appointed Mr. H. Napier to be his Principal Private Secretary, and Miss M. B. Sale to be his Assistant Private Secretary.

#### L.N.E.R. APPOINTMENTS

The following appointments are announced:—

Mr. J. S. Harper, District Superintendent, Hull, is to retire on May 18.

Mr. L. Ballan, District Superintendent, Sunderland, has been appointed District Superintendent, Hull.

Mr. A. E. H. Brown, Assistant District Superintendent, King's Cross, is to act as District Superintendent, Sunderland.

#### THE INSTITUTION OF LOCOMOTIVE ENGINEERS

The following elections were made on April 17 at a general meeting:—

##### Members

Charles E. Broxup, Inspecting Engineer, Egyptian & Sudan Governments in Midlands, Birmingham.

A. G. Corrie, Director of J. B. Corrie & Co. Ltd. and Felco Hoists Limited, London.

B. Fawcett, Acting Assistant Chief Mechanical Engineer, Central Railway of Peru, Callao.

N. Tate, Mechanical Engineer, Rio Tinto Co. Ltd., London Offices.

A. F. Walters, Assistant Director, Transportation Equipment, Ministry of Supply.

##### Associate Members

P. T. Ming, Engineer of Szechuen-Yunnan Railway, working at Metropolitan-Cammell Carriage & Wagon Co. Ltd.

A. H. Emerson, Technical Assistant, C.M.E. Dept., L.N.E.R., London.

G. H. K. Lund, Inspector Gateshead High Shed, L.N.E.R.

G. L. Nicholson, Loco. Foreman, Southern Railway, London.

#### INDIAN RAILWAY STAFF CHANGES

Mr. E. L. Manico has been appointed to officiate as Chief Operating Superintendent, N.W.R., as from January 3.

Mr. H. M. R. Morse has been appointed to officiate as Deputy Chief Operating Superintendent, N.W.R., as from January 3.

Mr. L. E. Brock, Divisional Superintendent, N.W.R., has been permitted to retire from Government service as from January 13.

Mr. C. F. Gilbert, Divisional Superintendent, E.I.R., has been granted 8½ months' leave prior to retirement, as from February 11.

Mr. R. Mair, Officiating Divisional Superintendent, E.I.R., has been granted four months' leave as from January 16.

## TRANSPORT SERVICES AND THE WAR—35

### *Railway rates increases—Pigeon transport—The Auxiliary Military Pioneer Corps—Train service alterations—Transport workers hours in Germany—New strategic railways in Turkey—The war in Scandinavia*

The Minister of Transport has authorised an all round increase of 10 per cent. in railway rates, fares, and charges, effective as from May 1, to meet variations in working costs and other conditions arising from the war. This was announced briefly in THE RAILWAY GAZETTE last week, at pages 564 and 588. In the case of certain passenger fares the limitations of the currency make it impossible to apply the increase uniformly and the following examples illustrate how the advance will be made:—

Main-Line Railways					Workmen's Return Fares	
Present fare					Increase	
2½d. to 7d.					½d.	
7½d. to 1s. 0d.					1d.	
1s. 0½d. to 1s. 5d.					1½d.	
1s. 5½d. to 1s. 6d.					2d.	
Cheap Day Return and Ordinary Single					Increase	
Present fare					No change	
1½d. to 4½d.					1d.	
5d. to 1s. 2d.					2d.	
1s. 3d. to 2s. 0d.					3d.	
2s. 1d. to 2s. 10d.						
Monthly Return Fares					Increase	
Present fare					6d.	
4s. 7d. to 5s. 4d.					1s. 6d.	
14s. 7d. to 15s. 4d.					4s. 11d.	
48s. 9d. to 49s. 6d.					5s. 0d.	
49s. 7d. to 50s. 4d.						

#### London Passenger Transport Board

Ordinary single fares and workmen's returns, except on Metropolitan Line					Increase	
Present fare					No change	
1d. to 4d.					1d.	
5d. to 1s. 2d.					2d.	
1s. 3d. to 2s.						

Workmen's return fares on the Metropolitan Line, and cheap day return rail fares, will be increased in the same manner as on the main-line railways

#### Irish Tariff Increases

Notice of increases in rates and fares, to take effect on May 6, is given by six Irish railway systems situate partly in Eire and partly in Northern Ireland. Passenger fares (including season tickets) will be increased by approximately 5 per cent., and goods and minerals traffic rates by approximately 10 per cent. The railways giving the notice are: County Donegal Railways Joint Committee; Dundalk, Newry & Greenore; Great Northern (Ireland); Londonderry & Lough Swilly; Sligo, Leitrim & Northern Counties; and Strabane & Letterkenny. It is announced that this revision of existing fares and rates is imposed in consequence of rising costs due to the war.

#### Northern Ireland Transport Rates

Passenger and freight rates of the Northern Ireland Road Transport Board are to be raised by 5 per cent. and 10 per cent. respectively from May 6. There will be no change in passenger fares up to 4½d.; from 5d. fractions over ½d. will be treated as 1d. and fractions less than ½d. disregarded. A similar advance in rates on the railways in Northern Ireland is reported to be contemplated.

#### Irish Cross-Channel Rates

The railway and steamship companies which work services between Great Britain and Ireland announce an increase of 10 per cent., as from May 1, in the through rates for merchandise and livestock between stations and places in Great Britain and stations and places in Ireland. In the port to port rates between Great Britain and Ireland as from the same date there will be an increase of 12½ per cent. for merchandise and increases of 5s. a head for horses and mules, of 1s. 6d. a head for cattle and calves, of 9d. a head for pigs and of 3d. a head for sheep and lambs.

#### Bookstalls at Railway Stations

Publications sold at bookstalls on railway stations were the subject of a question in the House of Commons on April 11 when Sir Arnold Wilson asked the Home Secretary whether he was aware that W. H. Smith & Sons Ltd. distributed on

sale or return, through railway bookstalls, copies of *Peace News*, including advice for objectors. Sir Arnold also wished to know whether the Minister would consider, in communication with the Minister of Transport, the issue of Defence Regulations which would enable W. H. Smith & Sons Ltd. and other newsagents, notwithstanding the terms of their contracts with railway companies, to exercise, in the public interest, discretion as to the printed matter which they distributed as agents. In his reply, Sir John Anderson said that, so far as he was aware, the usual licence granted by a railway company to a newsagent did not limit the discretion of the newsagent to refuse to supply any particular publication. In any event, he could not regard a regulation on this subject as necessary for the purpose of the Defence of the Realm.

#### Limited Transport for Homing Pigeons

Hundreds of thousands of trained carrier pigeons, many provided by homing pigeon fanciers, are being used for war purposes by H.M. Forces. The training of pigeons for long-distance flying takes five years, during which time the birds are sent away to be released to fly home over gradually increased distances. In co-operation with the pigeon racing associations the British railways are arranging to provide vans for the carriage of homing pigeons during the forthcoming season. Despite national requirements, the railways will be able to provide 50 per cent. of the vans supplied for last season's racing. The accommodation has been increased by arranging the baskets of the birds in three tiers instead of two. Similar liberation points to the 1939 season are being arranged, but it will not be possible to organise the overseas flights, such as France and the Channel Islands, although Northern Ireland may be used. The conveyance of homing pigeons will be suspended during the three week-ends beginning Saturdays, July 27, August 3 and 10 in England and Wales, and July 12 and 19 in Scotland. Pigeon fanciers will obtain special buff permit labels allowing the transit of birds which are to be liberated for either training or racing purposes, and green labels will be required for the transit of pigeons other than for liberation. Pigeon fanciers when carrying pigeons, should have in their possession their police permit which allows of their keeping pigeons.

#### "Labor Omnia Vincit"—the Pioneers

The Auxiliary Military Pioneer Corps was authorised in October, 1939, by Royal Warrant, and its formation was announced by the War Office on October 25, the day on which recruiting for it (on a limited scale) was opened throughout the country. At first the normal age limits were fixed at 35 to 50 (as we recorded at page 590 of our November 3, 1939, issue), but these have since been modified to 30 to 50. The Director is Major-General L. W. Amps, and the motto of the corps *Labor Omnia Vincit*. In view of the increased need for pioneers at present, an intensive recruiting campaign was launched at the Mansion House on April 15 by the Lord Mayor and General Sir Robert Gordon-Finlayson, and was so overwhelmingly successful the first day that the special medical examination staff provided by the Ministry of Labour was insufficient to deal with the rush. A War Office mobile information bureau began on Monday last at Birmingham a five-week recruiting tour in the Southern, Western, and Northern Commands on behalf of the A.M.P.C.

The corps is designed to carry out work with the object of ensuring the proper maintenance of all kinds of supplies to our armies at home and abroad. This entails handling at docks, bases, and depots, of a vast amount of stores, and, to ensure the smooth transport of such stores, roads and railways on lines of communication must be maintained in a fit



condition. In addition, new roads are built as required, and light railways laid. The military pioneer in earlier years was needed mainly to blaze a track through woods and undergrowth for the troops and transport advancing behind him.

Pay and conditions are the same as for British infantry; a private receives 2s. a day, a corporal 4s., and a sergeant 6s. Service with the A.M.P.C. has the advantage that certain handicaps like defective eyesight or slight physical disability are of no great consequence and do not debar a man from being accepted. Another advantage is that if friends enlist together they may be kept together and placed in the same sections. On enlistment a man is sent to one of the A.M.P. Training Centres where he is provided with his uniform and equipment, and put through a short intensive training of about 3 weeks. On conclusion of this he receives a few days' leave before embarkation. At present there is an urgent need for pioneers in the B.E.F. and it is estimated that at least 100,000 men will be required during 1940. Companies, as formed, are proceeding to France. For purposes of defence, 25 per cent. of every Company is armed with rifles; pioneers are therefore a combination of a potential fighting force and a working force. A distinctive badge has been approved for the Corps. A rifle, pick, and spade bound together with a laurel wreath, occupy the centre, and the whole is surmounted by a crown, with the motto at the foot.

#### A Record Railway Removal

The Great Western Railway has recently carried out one of the largest removals it has handled. Cheltenham College which, since the war, has been given refuge at another famous public school, Shrewsbury, has returned to its own buildings, which have been released by the Government. The removal of the 350 boys and their masters necessitated the supply by the railway company of over 700 sacks, for every boy was given two sacks in which to pack (a) books, and (b) his personal belongings and sports gear. For convenience in collection and delivery, the property of every House of the college was kept separate and this was carried out by allocating different labels in the distinctive House colours to every boy to label his sacks, and the railway vans (which were also distinguished by coloured bands pasted on the sides) collected the sacks in accordance with the House to which they were allocated. Other college property, such as bedsteads, bedding, and crockery, used by the boys in the billets, was also collected and taken to the quadrangle where the centralised loading of the containers was carried out. Twenty-five covered containers, measuring 16 ft. long, 6 ft. wide, and 7 ft. high, were used. One container was set aside for the bicycles of the boys and staff, while every master had a quantity of personal luggage, for which sacks and boxes were provided. Removal accommodation had also to be provided for the effects of the sanatorium and the equipment of the O.T.C. The actual packing of the traffic into the railway containers was carried out by experienced men on the company's staff. The delivery at Cheltenham, while less difficult than the collection at Shrewsbury, also required careful consideration, but the carefully drawn up schedule of operations made in conjunction with the college authorities enabled the work to proceed with efficiency.

#### Train Service Alterations

The L.N.E.R. announces that from May 3 further relief expresses will run on Fridays (in addition to the 3.50 p.m. from London to Newcastle, mentioned in THE RAILWAY GAZETTE of April 19) from King's Cross at 7.5 p.m. to York and Newcastle, arriving at 12.58 a.m., and at 10.5 p.m. to Edinburgh, arriving at 7.10 p.m. The running of the 10.30 p.m. nightly relief express from King's Cross to Newcastle has permitted the down 10.15 p.m. Night Scotsman to be restored to its December 4 schedule, reaching Edinburgh at 7.15 instead of 8.18 a.m. On Saturdays from May 4 a relief restaurant car express will leave King's Cross at 1.25 p.m. for Bradford and Hull, and the 1.15 p.m. train will be for Leeds only; also on Saturdays only the 3.5 p.m. express, from King's Cross to Peterborough, Boston, and Cromer Beach, will be reinstated, and will have a buffet

car attached. On Saturdays, beginning May 18, through trains will resume running between Derby, Nottingham, Skegness, and Mablethorpe; also between Sheffield and Skegness.

On the L.M.S.R. a new public timetable book came into operation on April 1, and incorporates the various alterations that have been mentioned in previous issues of THE RAILWAY GAZETTE. As a temporary measure, consequent on the withdrawal of third class sleeping cars on the L.N.E.R. and the restriction of first class sleeping accommodation, special sleeping car trains, first and third class, are being run by the L.M.S.R. at 10.50 p.m. from Euston to Edinburgh (Princes Street) and 10.15 p.m. from Edinburgh to Euston. Also the 9.20 p.m. from Euston to Glasgow and the 9.30 p.m. from Glasgow to Euston are now composed entirely of sleeping cars, the normal formation including nine first class and three third class cars.

On the Uxbridge line of the London Passenger Transport Board there has been a considerable improvement in the late evening service, which is now at 10 min. intervals, three trains an hour to and from the Baker Street line and three to and from the Piccadilly line.

#### Hours of Transport Workers in Germany

The recent increase in the maximum daily hours of work permitted in Germany for transport workers was recorded at page 305 of our March 1 issue. This Decree was published in the *Reichsarbeitsblatt* of January 25 last, and is stated to have been made in order to meet traffic requirements and to allow of better use of the means of transport. It appears that the German Minister of Labour issued an Order of January 17 providing that the maximum hours of work fixed by the Order of December 12, 1939, may be exceeded in the case of adult male transport workers under certain conditions, namely, that the working hours must be governed by collective regulations which must fix the maximum limits of overtime, and that the minimum uninterrupted rest period of 10 hours between one working day and the next must be granted as laid down by the Order relating to hours of work. The Order of December 12 fixed the maximum period of work at 10 hours as a general rule and 12 hours for intermittent work. It is understood that under the new Decree a 14-hour working



Women in German Railway Service

As many German railwaymen are serving in the Forces, and others are occupied in the reconstruction of the damage to Polish railways, women are serving in booking offices, as ticket collectors, and in similar capacities

day for all German transport workers over 18 years of age was introduced at the beginning of February.

On the day that Poland was invaded, an Order (dated September 1, 1939) was made to amend and supplement the provisions of the labour law. This was in effect a wartime relaxation of previous restrictions, and under it the hours and conditions of labour are reported to have become lengthy and severe. It will be recalled that between October 8 and December 12 there was a series of fatal accidents (mainly collisions) on the Reichsbahn, and in THE RAILWAY GAZETTE of December 22 last we expressed the opinion that the lengthened hours of work by railway staff may have been an important contributory factor. Probably it is more than a coincidence that the date of the last of this particular series of unexplained accidents (December 12) is that on which the Order was made restoring the pre-war overtime limits. In the memorandum accompanying the Order, the German Minister of Labour gave the following general reasons for reverting to a stricter system:—

"Even in wartime, an essential purpose of labour protection is to take care of every worker's health. Even if output has to be increased, exaggerated demands must not be made on the workers. Accordingly, the relaxation of labour protection instituted at the beginning of the war could apply only during the initial period of adjustment to new tasks. That period having expired, the Government is again fully concerned with the protection of labour. Excessive hours of work must be prevented, and the protection of women and young persons reinforced. If this is done, it may fairly be expected of all workers that they should place all their working energy at the disposal of the country in the struggle which has been forced upon it."

The Order, which was to become effective on January 1, 1940 (see the *Reichsgesetzblatt* of December 13, 1939), applied to the old Reich and also to Austria, as the German labour laws had been extended to Austria by an Order of October 9, 1939. It provided that: "So far as hours of work may be extended at all under the relevant laws and regulations, or in virtue of decisions based on those laws and regulations, hours of work may not exceed 10 in the day, except when shifts are changed over in the case of continuous work." An exception was that: "When considerable periods of mere attendance are regularly included in hours of work, the working day may be extended to 12 hours for men over 18 years of age." Extensions of hours in excess of these limits were to be allowed only in exceptional cases, and subject to the issue of a special permit. From December 18, when hours of work exceeded 10 in any one day, the workers were to be entitled to overtime pay, normally fixed at time-and-a-quarter; but this rate was not applicable to cases of work regularly involving "considerable periods of mere attendance." Doubtless the very severe weather conditions of January accounted in part for the fact that the relaxation lasted for so short a period, but there has been no hint of any resumption of shorter hours.

#### Reduced Dutch Train Services during the Crisis

Skeleton services were maintained in Holland during the early days after the German invasion of Denmark and Norway, namely, from April 9 to 14. Normal train services have now been restored, with the exception of frontier services along the entire Dutch-German border, which remain very irregular.

#### New Strategic Railways in Asiatic Turkey

The Turkish Ministry of Public Works has voted £10,000,000 to speed up the construction of two important railways to connect with Iraq and Iran respectively, according to a Reuters message from Istanbul. The first route runs from Diarbekr through Bismil to Mardin and uses the existing branch thence to Derbessie to connect with the Taurus route to Mosul and, eventually, Baghdad. The second route is also in extension of the existing Malatia—Diarbekr line, and terminates at Van on the lake of that name. But it is not at present clear whether this proposed line will take off from Kharput (Mamuret el Aziz)—the terminus of a short branch from Yolchati—and run up the Murad river through Mush to Bitlis, and thence along the lake shore to Van, or whether it will branch off from the new line to Iraq at Bismil and cut across through Sert to Bitlis. The latter would appear to be the cheaper line to build and work as it is in easier country. Van is within about 70 miles of the Iran frontier, but this intervening stretch of country appears to be mountainous.

Both of these new railways will form important strategic lines of communication if the war spreads to the Middle East. They are stated by Reuters to have been under construction since 1937, but it is not known what progress has been made. The map reproduced at page 620 of our October 7, 1938, issue showed the approximate routes.

#### New Zealand may Restrict Rail Services

The New Zealand Government Railways may soon have to restrict their rail services as a means of conserving coal, said Mr. P. C. Webb, New Zealand Minister for Mines, in an interview at Christchurch on April 22. The railways, he added, would be the first to suffer if a coal shortage made saving necessary.

#### Troop Movements on the Victorian Railways

Since the outbreak of war the Victorian Government Railways have been called upon to carry many thousands of troops, large quantities of equipment and stores, and to assist in the production of munitions. Major troop movements have sometimes clashed with exceptional rushes of ordinary or holiday traffic, but the number of special trains required has always been forthcoming. For instance, on Melbourne Cup Day, when 50,000 race-goers had to be carried to Flemington and back—in addition to the transport of crowds of holiday makers and picnickers to the hills and seaside—4,500 soldiers were rapidly evacuated from camps in the Seymour district in 10 special trains. Some of these consisted of 12 cars and carried 800 men, but, despite the holiday and race traffic rush, they were quickly assembled and despatched.

#### The War in Scandinavia

We have frequently emphasised in these columns that all aspects of the present war are intimately associated with transport, and especially railway transport. This state of affairs applies with particular force to the activities in Denmark and Norway. Important objectives in the German invasion of Denmark were, beyond all question, the control of rail transport in that country and of fuel oil supplies. In Norway, where the German activities are being resisted, the layout of the railway system and the measure of control secured by the conflicting forces of important junctions and strategic lines, undoubtedly supply the key to the activities so far, and will prove the ultimate deciding factors. The following notes outline the situation to date, so far as it has proved possible to form an estimate of the position generally, from unofficial reports which are often contradictory.

#### Denmark

Denmark was invaded at 4.30 a.m. on April 9 and it seems that Copenhagen was in German hands by 8 a.m. and control of the whole country secured during the same day. Apparently the invasion was carried out at six main points, namely (1) by land across the South Jutland frontier towards Aabenraa and Esbjerg; (2) by sea up the Little Belt to Middlefart, in north-west Funen; (3) at Nyborg (east Funen) and Korsør (west Zealand); (4) Vordingborg (south Zealand); (5) Gedser (the train ferry port in south Falster); and (6) Copenhagen. Invasion No. 2 gave the Germans control of the Little Belt bridge, linking the island of Funen with Fredericia, on the mainland of Jutland. Invasion No. 5 actually made use of the Danish train ferry from Warne-münde in north Germany. Troops are reported to have been run on to the ferry in closed goods vans, which the Danish railway personnel accepted innocently as a regular commercial train. When the ferry was out at sea the troops emerged from the van "like the Greeks out of the Trojan Horse," and took possession of the vessel. The only Danish resistance offered was on the land frontier, and here casualties were at first stated to be practically nil, but it has since been announced that Denmark lost some 600 before the Danish Government ordered the abandonment of resistance.

One of the main gains to Germany was the stock of petrol in Denmark. In British trade circles it was believed that stores had been growing and at the time of the invasion amounted to some 250,000 tons. In the House of Commons on April 16, however, the Minister of Economic Warfare

said that the total stocks of all petroleum products in Denmark on the date of the German invasion were probably not more than 200,000 tons, equivalent on the average to 3½ months' requirements at the estimated rate of consumption before the invasion. Stocks of motor spirit amounted to 80,000 tons, equivalent to slightly under four months' requirements. Separate figures for diesel oil were not available, but stocks of gas, fuel, and diesel oil together amounted to 61,000 tons, equivalent to 2½ months' requirements. On the basis of the known stocks of diesel oil on February 1, probably not more than 20,000 tons of this figure was represented by diesel oil. From May 1 stricter petrol rationing is being introduced in Denmark, and only 20 per cent. of pre-war consumption will be issued for civil use.

On April 12 the Official German News Agency said that British aircraft had attacked a small railway station in Schleswig-Holstein, northern Germany, but the British Air Ministry denied that there was any truth whatever in the story. To date there has been no reliable information of railway destruction in or near Denmark, either by the German invading forces, or by the Allies.

The Danish State Railways are stated to be functioning fairly normally under their Danish staff, but subject to German direction. All diesel trains are reported to have been cancelled immediately under German orders, to conserve fuel oil supplies. The Danish railways have been used to take German troops to airports at Copenhagen, Aalborg, Aarhus, and Esbjerg, for conveyance by air to Norway.

A special train conveying about 170 members of the British, French, and Polish diplomatic staffs in Denmark was run across Germany to Holland *via* Bentheim. It reached Holland on April 13. A Rotterdam report of April 21 said that a German commercial delegation had arrived in Copenhagen, and included a railway representative who was believed to be intending to secure Danish rolling stock for use in Germany.

A Danish railway ferry-boat (reported to be the *Nyborg*), plying across the Great Belt from Nyborg to Korsør, was damaged by an explosion on the afternoon of April 14, according to the Finnish radio, quoted by Reuters. There were no casualties, it was stated, and the ferry was brought into Korsør Harbour. The Danish State Railways announced in Copenhagen (states the British United Press) that the steam ferry *Odin*, going from Nyborg to Korsør, was damaged by "an explosion" on April 17. No one was hurt. The ferry was brought in to Korsør and all traffic in the Great Belt was halted until further notice. A further similar incident on April 21 was announced on the German-controlled Copenhagen radio. It may be recalled that for some time past the ferries have not been running after dark, owing to the danger of floating mines.

### Norway

German forces landed on the south coast of Norway at 3 a.m. on April 9. The principal points of landing appear to have been Moss (near Oslo), Egersund, Stavanger, Bergen, Trondheim, Vallo, and Narvik. The Norwegians speedily decided to resist, and declared war on Germany. The Germans supported a puppet government under a Norwegian named Quisling, who later resigned, however.

On April 11 the Norwegian army authorities requisitioned all means of transport for the conveyance of troops and munitions. The same morning they are understood to have blown up several bridges on the railway from Oslo to Kongsvinger, but to have left intact the line thence to the Swedish frontier at Charlottenberg. The whole of the Östfold (south east of Oslo) is said now to be in German occupation, and on April 17 traffic was stated to be running again between Oslo and the Swedish frontier at Kornsjo.

The German landing at Narvik is credited to the treachery of the Norwegian military commander there, but he was speedily displaced, and on April 11 Norwegian troops were said to have defeated the German attempt to advance from Narvik to the Swedish frontier by the iron-ore railway, by blocking the tunnel at Hyndalen, about 18 miles inland from the port. The Norwegians are stated to have pulled up a portion of the track and then let a fully-loaded iron ore train run down the grade till it became derailed, thus blocking the line. Subsequently it was reported in Stockholm that the 120-ft. high railway bridge at Rombaksbotn (about 15 miles

from the Swedish frontier) had been wrecked. British Forces are said to have landed at Narvik on April 14.

German troops were landed by parachute on April 15 in an attempt to secure control of the important railway junction of Dombås, but they were either killed or captured.

On April 15 the British Admiralty and War Office announced officially that British Forces had been landed at several points in Norway. The same day a train filled with German troops, travelling without lights from the direction of Trondheim, passed through the Norwegian lines, and was taken to within three miles of the Swedish frontier. Guards were dropped at all bridges and a small force was sent to Skurdalsvolden. It appears that the train was allowed to pass because a Norwegian traitor gave the garrison at Hegra to believe that the train was Norwegian. This move is understood to have given the Germans control of the whole railway from Trondheim to the Swedish frontier at Storlien. No official details are available of British military movements in Norway, but British troop trains were reported to have reached Støren on April 22, and it was stated in Stockholm that the important strategic railway from Andalsnes to Dombås and on to Lillehammer was entirely in Allied hands.

The German military authorities in Norway are stated to be anxious to prevent the evacuation of occupied areas by the civilian population. When, at the time of the seizure of Trondheim many persons started to leave the town by the Ostersund railway, the Germans decided to stop the exodus by a trick which would frighten the refugees. A Norwegian agent telephoned to the Commander of the garrison in Vedra fort, which is on the railway, and told him that in the rear wagon of the passing train there were German troops and military stores sent to take him in the rear. The Norwegians accordingly opened fire on the rear wagon. Two Norwegian civilians were killed and five wounded.

Many applications for enlistment in the Norwegian Forces having been received at the Norwegian Legation in London, a special depot was opened on April 17 at the offices of the Norwegian State Railways in Cockspur Street, W.

Norway is understood to have been exceptionally well-equipped with petrol and diesel oil for transport at the beginning of the invasion, and thus was probably regarded by Germany as one of the richest prizes among European countries not producing oil. Last summer, Norway bought nearly a year's supply of petrol and lubricating oils. Since October 20 she has been the only important European country without any rationing of petrol.

### Finland and Sweden

The Soviet authorities are insisting on the speedy construction of the railway line linking Russia with Sweden *via* Finland, according to the Rome radio. This involves building the section between Kandalashka on the Murmansk Railway, and Kemijärvi, which was provided for by the terms of the peace treaty, as we recorded at page 474 of our March 29 issue. It is stated that the Russians have promised far-reaching assistance in carrying out the work, which is to be completed during the present year.

At the time of writing, Sweden has still retained her neutrality, but is nevertheless affected in many ways by the wars in neighbouring countries. The incidence on Sweden of the war in Finland has already been recorded in these columns, and, even before the German invasion of Denmark and Norway, Sweden suffered from wartime disorganisation of transport. Coal scarcity was experienced even before the intense cold spell began, and eventually this led to the suspension of a number of express train services on March 1.

By the beginning of April, it was reported that iron ore supplies from Kiruna, intended for Germany, were being transported to Luleå to await the opening of the port when the ice freed. It was stated that ore trains were running every three-quarters of an hour, and that, despite the increased cost of transport by this route (due to the longer rail haul), Germany might be well supplied *via* the Baltic during the summer. From April 17, civilian traffic has been prohibited on the iron-ore railway between Kiruna and Riksgränsen, the Swedish frontier station.

On April 11, the petrol ration for private motorcars in Stockholm was reduced by one third, in order to conserve fuel stocks, and five days later all mineral oil in Sweden was requisitioned under a Government Decree of April 15.



## Locomotive Developments in France

In a paper entitled "Recent Developments in Steam Locomotive Design in France," Monsieur Chan, Chef de la Division des Etudes de Locomotives à Vapeur, Société Nationale des Chemins de Fer Français, described the successful modernisation of old locomotives and a number of new and experimental designs

At a meeting of the Institution of Locomotive Engineers in London on Wednesday, April 17, at which Mr. O. V. S. Bulleid, President, took the chair, Monsieur Chan, of the French National Railways, presented a paper entitled as above. The first part of it was read by Monsieur Leguille and the second part by Monsieur Chan himself.

The author began by referring to the progress made in steam locomotive design during the past ten years in France, since Monsieur Chapelon modernised the Pacific locomotives of the Paris-Orleans Railway, and later converted some of them into 4-8-0 locomotives, the effect of which was almost to double the power of the engines.

The French National Railways since their formation in 1938 have ordered a number of new locomotives of the Santa Fe (2-10-2) and Decapod (2-10-0) types for goods traffic, and of the Baltic (4-6-4) type for passenger service. In addition, some experimental types have been built, namely:—

A 4-6-0 4-cylinder compound has been equipped with a Velox boiler.

Two new 4-6-4 locomotives have been built, one with individual axle drive by geared steam engines, and with a high-pressure boiler (850 lb. per sq. in.); the other with separate turbine drives to each driving axle.

A 2-12-0 freight locomotive with two h.p. and four l.p. cylinders.

Two factors have governed the development of the steam locomotive in France. First, the necessity to import a large proportion of coal, has made it important to build locomotives with a low fuel consumption, and, secondly, powerful locomotives are required to haul the very heavy trains which since 1922, when all-steel rolling stock was introduced, have increased in weight, until now passenger trains of from 600 to 750 tons are common. A complication is caused by the fact that axle loads are limited to 18½ tons on all but a few main-line railways.

### Chapelon Engines

Reference was then made to the 4-8-0 locomotive converted by Monsieur Chapelon from a Paris-Orleans Pacific in 1935. The French railways are at present building 25 new engines of this type for service on the Paris—Lyons main line, where there are long gradients of 1 in 125. This type of locomotive<sup>1</sup> has 6 ft. 1 in. driving wheels, high and low pressure cylinders of 17·3 in. and 25·2 in. diameter, respectively, by 25·2 in. stroke, and works at a pressure of 285 lb. per sq. in., which is now the standard for new locomotives in France. It has a grate

area of 40·45 sq. ft., Kylchap double exhaust, and Houlet superheater, giving 750–800° F., and exerts 3,000 d.b.h.p. at 62 m.p.h., with a coal consumption at that speed of 2·20 lb. per d.b.h.p. hr. The engine weighs 107 tons and the tender 79 tons fully loaded. This engine seems to have set up a record for the lowest weight per h.p., namely, 60·6 lb.

Much of the success of this locomotive is attributed to the Kylchap exhaust.<sup>2</sup> Other modern types of exhaust were the P.L.M. type with crossed-bars and double nozzle and petticoat, and the Lemaître<sup>3</sup>. These improved exhausts, with wide steam ports, have allowed of an increase in the rate of combustion, so that it has been possible to burn up to 205 lb. of coal per sq. ft. of grate per hr. in the 4-8-0 locomotives, and to obtain easily from existing boilers a steam output of 44,000 lb. per hr.

### Evaporation and Superheating

At the high evaporation rate at maximum output of 15·4 lb. of steam per sq. ft. of heating surface, no trouble has been experienced with the welded steel fireboxes and welded flues now adopted by the S.N.C.F., which has also decided on the high working pressure of 285 lb. per sq. in. for new engines. The use of Nicholson thermic syphons gives no difficulty in steel fireboxes. The only experience of the thermic syphon in copper fireboxes was with a few Pacifics of the Eastern and South Eastern Regions, where cracks had occurred at the connection with the tube plate. These were repaired by welding, and were subsequently maintained in service for 240,000 miles without further repairs. Nevertheless, welding repairs to a copper syphon necessitate exceptionally good workmanship.

The high superheat temperature of the 4-8-0 locomotive has been achieved by the use of a Houlet type superheater,<sup>4</sup> which gives the advantage that superheated steam is delivered to the cylinders as soon as the regulator is opened. Special heat-resisting steel, which included 6·0 per cent. chromium and 0·25 to 0·60 per cent. molybdenum, so that the loops can be placed within 12 in. of the tube plate, has been used. Another type of superheater now being used in France is the 5.P.4 type of the Superheater Company, which embodies four outer tubes for the first branch of the loop and a fifth in the centre for the second branch.

Improvement in the steam ports is another important factor in the success of the modernised locomotives. Previously the section of the ports was 1/10th of the cylinder section. Now it is equivalent to 1/5th, or twice as large. The capacity of the steamchests has

been increased to that of the cylinders in order to avoid oscillations in pressure. In addition, large diameter poppet valves are used. As a result, it has been possible to raise the pressure in the intermediate receiver from 30 to 85 lb. per sq. in., thus enabling the low pressure cylinders to give approximately the same output as the high pressure cylinders. There is now a total of 335 locomotives equipped with poppet valves in France, either for all the cylinders or only for the low pressure cylinders where the use of large steam ports entails difficulty. Piston valves with double inlet and outlet are also used, and have the advantage that their maintenance does not require so much skill. This type of valve on the Mikado (2-8-2) locomotives has made possible an increase in power from 1,400 to 2,000 h.p., and it has been decided to fit these piston valves on all the 680 2-8-2 engines of the "C" class of the former P.L.M. Another type is the Willoteaux piston valve<sup>5</sup> for use with new cylinders. These poppet valves and special piston valves are used with Walschaerts gear, for it has been found that the phases given by this gear are precisely those which ensure a minimum of steam consumption.

Summarised, the results of these improvements as applied to the Pacific locomotives, of which there are 1,500 in France, are that, whereas an engine designed before 1930 developed at 75 m.p.h. 1,300 d.b.h.p. with a coal consumption of 3·3 lb. per d.b.h.p. hr., the improved Pacifics now develop, under the same conditions, 2,400 d.b.h.p. with a coal consumption of 2·42 lb. of coal, i.e., an increase of over 80 per cent. in power with a saving of nearly 30 per cent. in fuel. The author mentioned two cases of notable test performances by modernised Pacific locomotives, namely, one in which a Paris-Orleans Pacific hauled a train of 620 tons over the 217 miles between Tours and Bordeaux at an average speed of 62·8 m.p.h.<sup>6</sup>; and another with an "H" class of the former P.L.M.,<sup>7</sup> hauling a train of 400 tons from Paris to Marseilles (537 miles) in 9 hours, or at an average speed of 59·7 m.p.h.

### Modern Types

The author went on to describe the new 2-10-2 locomotive of the former Alsace-Lorraine Railways, now part of the Eastern Region, which was designed to haul goods trains of 1,600 tons up 1 in 100 gradients.<sup>8</sup> These engines are three-cylinder simples with Caprotti poppet valve gear, and were compared just before the war with the 2-10-2 four-cylinder compounds of the former P.L.M.,<sup>9</sup> when it was shown that the latter was 10 per cent. more economical in coal consumption. Next the author described the new 4-6-4 locomotives of the "R" and "S" classes for the Northern Region, designed by Monsieur de Caso, four of which have three single expansion cylinders, and four of which are four-cylinder compounds. These eight engines are fitted with the Lemaître type of exhaust, and Dabeg

rotary cam poppet valves.<sup>10</sup> They have a maximum axle weight of 21.6 tons.

For general utility purposes a new class of 2-8-2 engine has been designed by the S.N.C.F., to haul a 650-ton train at 62 m.p.h., or a 1,000-ton train at 50 m.p.h., and capable of a maximum speed of 68 m.p.h. These are a development of the well-known 2-8-2 P.L.M. "C" class, but with stiffer frames and simplified driving gear, the object of which is to reduce maintenance costs. The principal dimensions of these engines, of which 50 are to be built, are as follow:—

Cylinders	High pressure, diameter...	16½ in.
	stroke ...	27½ in.
	Low pressure, diameter...	25½ in.
	stroke ...	27½ in.
Driving wheels, diameter ...	5 ft. 5 in.	
Graze area ...	45 sq. ft.	
Working pressure, per sq. in. ...	285 lb.	
Tractive effort (at 85 per cent. of working pressure):		
When starting, simple ...	53,000 lb.	
When working, compound ...	41,000 lb.	
Maximum axle load ...	18½ tons	

The low pressure cylinders are between the frames, which gives the best disposition with regard to the blast pipe, but is difficult with large low pressure cylinders which are in line with the high pressure cylinders—a difficulty which has been overcome by using cast steel cylinders with a ¾ in. thickness of wall. All four cylinders are cast in one. The pistons are of cast steel covered with Brox, a special brass which is welded on. They are then machined to a diameter only about 1 mm. less than that of the cylinder, a method which assures a long mileage for the piston rings.

### Experimental Engines

Of the various experimental engines already mentioned only that with a Velox boiler<sup>11</sup> could be tested before the outbreak of war. The working pressure with this boiler of 285 lb. can be obtained in 15 minutes from cold, and the fire may be extinguished and relit as desired. In regular service this locomotive has hauled 500-ton trains between Paris and Dijon on an average fuel oil consumption of 1.95 gal. per km. Up to the outbreak of war the Velox locomotive had run 12,000 miles without failure. The efficiency of the boiler is 85 per cent. It has no blast-pipe, and therefore there is no need for back-pressure, so that the cylinders can release the exhaust steam at about 2 lb. per sq. in., instead of 30 lb. per sq. in., as with an ordinary locomotive. At 75 m.p.h. this results in a gain of about 170 h.p. The rapid circulation of the water counteracts the formation of scale in the Velox boiler, but as a precaution, a certain part of the feed water is softened by the use of trisodium phosphate.

Illustrations were shown of the new 4-6-4 turbine and geared steam engine locomotives which have recently been completed. They both have 5-ft. driving wheels and the former a coal-fired boiler with a special steel firebox, and works at 355 lb. per sq. in. It has three turbines, one on each driving axle, and each having a forward and reverse set of vanes on the same shaft. The

drive is through two sets of pinion gears on each axle. The turbines, which are very small, work at 10,000 r.p.m. with the axles turning at 200 r.p.m., and develop 1,000 h.p. each. The coupling to the wheels is of the Westinghouse quill type.

The geared steam engine locomotive has a coal-burning water-tube boiler working at 850 lb. per sq. in. The feed water first enters a preheater, with a working pressure of 285 lb. per sq. in., which is intended to soften the water and supply the steam to the auxiliary engines. Each axle is driven by two small single expansion engines, one on each side of the locomotive. There are thus six engines altogether. Each has three 6 in. by 10 in. cylinders, developing 500 h.p. at 1,000 r.p.m.

The new 2-12-0 locomotive,<sup>12</sup> designed by Monsieur Chapelon, is intended for goods service, and was completed at the beginning of this year. The object of the design is economy in coal consumption. It has two high pressure and four low-pressure steam-jacketed cylinders and two superheaters, one of which is between the high pressure and the low pressure cylinders. Monsieur Chan expressed the hope that Monsieur Chapelon would be able to pay a visit to England in the near future to give further information about the results of this experiment.

### Discussion

Mr. W. A. Stanier opened the discussion, and referred to the difficulties connected with limited structure gauge, which had so far prevented the adoption of compounding for powerful locomotives in this country. He also drew attention to the fact that the very low coal consumption quoted per d.b.h.p. hr. were at constant speed, a fact which had to be borne in mind when making comparisons with British locomotive tests which were all at variable speeds.

Mr. R. A. Riddles mentioned the possibility that the extraordinary improvement of the modified French engines compared with their originals might have been due to the low efficiency of the originals; but, in reply, Monsieur Leguille pointed out that the originals had satisfactorily performed the work for which they were first designed, and the main object of the improvements was to increase their power so as to bring them abreast of modern requirements. In answer to Mr. Riddles's question as to possible difficulties experienced in France with long rods controlling smokebox regulators, Monsieur Leguille replied that such difficulties had not been experienced in France, but that the rods were placed outside the boiler.

Mr. Julian Tritton described the difficulties which had been encountered with scale forming in the Doble type of boiler, with which the German railways had experimented, but Mr. Leguille, in reply, said that such difficulties had not occurred with the Velox boiler. He also mentioned, in commenting on Mr. Tritton's reference to stresses in the ordinary firebox with which the Velox

dispenses, that the French were now using Monel stays in steel fireboxes.

Mr. Cyril Williams expressed doubt as to how far the savings achieved by the complications introduced in locomotive parts justified the initial expense, and Mr. D. R. Carling also referred to the cost involved in carrying out such elaborate experiments as the author had described. M. Leguille asserted that such expenditure was, in his opinion, well justified, if it gave rise to working economies in large numbers of units, as in France.

Mr. T. H. Turner enquired whether the conditions under which locomotives were worked had changed in France, as they had in this country during the last few years, and whether locomotive water-softening had been adopted on a large scale. Monsieur Leguille, in reply, said that there were no fixed water-softening plants in France, but that soda ash was added to locomotive feedwater.

Mr. W. A. Willox said that the authors had been all too modest about French locomotive engineers. They would have been entitled also to refer to the fact that they had provided the answer to electrification by working suburban trains with highly efficient 2-8-2 locomotives maintained always at the same end of a suburban train and controlled, when the engine was pushing, by the driver from a cabin at the opposite end. These engines had cam-operated Cossart piston valves, good acceleration, and gave average speeds, including stops, which were equivalent to those of multiple-unit electric trains. He also suggested that one reason against compounding in this country was that our drivers were less competent mechanics than French drivers; but Monsieur Leguille expressed the opinion that it was easier to abuse a simple locomotive than a compound.

Mr. J. Pelham Maitland spoke of the more thorough training of locomotive personnel in France, and described some personal experiences with French locomotives he had driven.

Mr. H. Holcroft asked for further details of the ash pans used in the modern French locomotive, and enquired whether Brox was affected by the high superheating temperature. He also drew attention to the fact that, even without the loading gauge restrictions which limited British locomotive engineers, compounding was not adopted in the U.S.A. Monsieur Leguille, in reply, said that Brox was unaffected by high temperatures, and that for the very high powers required in the U.S.A., the matter of getting the steam from high pressure to low pressure cylinders formed a difficult problem.

<sup>1</sup> THE RAILWAY GAZETTE, July 14, 1933, p. 48, and Nov. 29, 1935, p. 912.

<sup>2</sup> *Ibid.*, Nov. 29, 1935, p. 914.

<sup>3</sup> *Ibid.*, April 17, 1936, p. 738.

<sup>4</sup> *Ibid.*, Feb. 22, 1935, p. 332.

<sup>5</sup> *Ibid.*, April 8, 1932, p. 534.

<sup>6</sup> *Ibid.*, Jan. 22, 1937, p. 152.

<sup>7</sup> *Ibid.*, May 21, 1937, p. 988, and Sept. 2, 1938, p. 401.

<sup>8</sup> *Ibid.*, Sept. 27, 1935, p. 489.

<sup>9</sup> *Ibid.*, July 29, 1932, p. 135.

<sup>10</sup> *Ibid.*, May 14, 1937, p. 939.

<sup>11</sup> *Ibid.*, March 31, 1938, p. 545.

<sup>12</sup> *Ibid.*, April 15, 1933, p. 751.

## PARLIAMENTARY NOTES

### Increase of Railway Charges

After the Minister of Transport had made his statement to the House of Commons on April 17 announcing a 10 per cent. increase in railway charges [given in full in *THE RAILWAY GAZETTE* of April 19] he answered several supplementary questions.

Mr. G. Ridley (Clay Cross—Lab.) asked if the Minister was aware that widespread criticism of the announcement would have been delayed if he had remitted the application to the Railway Rates Tribunal for public hearing instead of choosing to be judge and jury in his own case.

Captain Wallace: The reason I did not remit the proposal to the Consultative Committee, which consists of members of the rates tribunal, who advise me, was because time was of the essence of the contract. This deficit has been running on for some time and under the terms of the agreement, which was approved by this House on February 13, the Government is liable to reimburse the controlled undertaking in a sum approximating to £400,000 a week. The longer that is allowed to run on without the necessary adjustment of fares on principles already approved by this House, the more danger there is that the adjustment would have to be more drastic.

Mr. J. Wilmot (Kennington—Lab.): Does the Minister appreciate that having abolished judicial protection to the railway users which the Railway Rates Tribunal afford it, he is getting into a position wherein only one side of a case is being heard, and since the Government now has an interest in the profits of the Railway Companies, the consumers' interests are not being represented at all?

Captain Wallace: That is not the fact at all. If the jurisdiction of the Railway Rates Tribunal in regard to the general rates had not been suspended by me, it would have been open to the railway companies to go to the rates tribunal and ask for an increase of fares sufficient to bring their income up to the standard revenue, and under the law the Railway Rates Tribunal would, if they thought that would achieve the increase which I think is really probable, have been bound to grant that increase. It is therefore for the protection of the consumers of railway transport that we have suspended the application of the Railway Rates Tribunal in this regard.

Mr. Ridley gave notice that he would raise the matter at the earliest opportunity.

#### The Debate

On the motion for the adjournment of the House on April 23

Mr. G. Ridley (Clay Cross—Lab.) raised the question of the proposed increased railway fares. He said it was not his purpose to question the justification for the application, but

he did question the methods employed by the Minister to approve it. Everybody thought that when the Minister received an application of this character and magnitude, he would before reaching a decision upon it at least take the advice of the Railway Rates Tribunal, acting in an advisory capacity. He had neither used the kind of machinery indicated in the White Paper nor had he taken the advice of the members of the Railway Rates Tribunal in a consultative capacity. The Tribunal had for nearly 20 years heard all applications of this kind. Public hearings were held and evidence was given in public, but now discussions took place in a private room and a decision was given by an interested party, the Minister, who became judge and jury in his own case. The charge against the Minister was that he had destroyed public confidence, and in its place he made his own decisions, and whatever those decisions were, however fair, reasonable or justified they might be, they were bound to be the object of considerable suspicion and criticism because he was known to be a deeply interested party.

Captain Euan Wallace (Minister of Transport) said that in the debate on February 13 he stated that the whole foundation of the financial agreement between the Government and the railway companies was that the controlled undertaking should operate on an economic basis. He also said that if increased profits were obtained they would be obtained because extra work by the railways has entitled them to extra remuneration. In deciding the terms of control the Government were most anxious to avoid a repetition of the experience of the last war. No attempt was made on that occasion to maintain rates and fares at an economic level, with the result that shortly after the war, when steps were taken to place the railways on a self-supporting basis, it was necessary to make extremely drastic increases in charges.

The alternative to raising charges would be the policy of subsidy and keeping the railway charges at an uneconomic level. That would probably have disastrous consequences at the end of control when transport, presumably, would have to become once more self supporting. When he spoke last week of the liability to reimburse the railway approximately £400,000 a week he was referring to the undertaking to increase charges to offset increased working costs which had been proved somewhere about that figure. The criticism had been made that in view of the great increase in railway traffic since the outbreak of war there was no justification for increased charges. There had been a big increase of freight traffic on the railway, although the abnormal weather in February greatly reduced the tonnage

of traffic over the lines. The war had not by any means brought increased traffic to all parts of the railways. There had been a substantial falling off in passenger traffic and the London Passenger Transport Board had suffered heavily through evacuation during the 32 weeks since the beginning of the war. The gross receipts from freight traffic had increased by £13½ millions or 24 per cent. over the corresponding period a year ago. Passenger receipts had declined by £4 millions or 7 per cent. The net increase was £9½ millions or 8½ per cent. It must not be assumed that the additional war traffic on the railways had been carried without a substantial increase of expenditure. Much of it involved special working which seriously interfered with other services probably more remunerative. Turning to the actual amount of increased cost which was to be made good by an increase in rates, fares and charges, he said that it was estimated by the Railway Executive Committee at £26½ million pounds in respect of the 19 months from the beginning of control up to March 31, 1941. Of that sum £4½ millions related to increased cost of operation under war conditions. The estimates in regard to the sum were to be examined in the light of further experience. The balance was made up of £9½ millions increased wages, etc.; £2½ millions for allowances to employees serving with the Forces, and £10 millions increase in the price of materials.

If the increases were proved the railway agreement required him to make such increase in charges as would cover the additional working costs. An all round increase of 10 per cent. in railway charges if it were applied from May 1 was estimated to yield an additional £18 millions in a full year or £16½ millions during the 11 months from May 1 to March 31 next year. On the assumption that it was possible to obtain an additional £2 millions between now and the end of next March from an increase in road fares on the London Passenger Transport Board road system the total increase was estimated to produce £18½ millions, which was £3½ millions less than the proved increase in working costs and £8½ millions less than the estimate of the Railway Executive Committee of the total amount which under the agreement should be secured by means of additional fares, rates and charges up to March, 1941. They hoped that it would be found in practice that the increase would yield more than the estimate.

Objection had been taken to the fact that the new charges were to be imposed without a public hearing by the Railway Rates Tribunal. He said he explained to the House on February 13 that it was not possible to retain jurisdiction of the Railway Rates Tribunal over the general level of charges of the controlled undertaking on the ground that some more expeditious procedure was necessary. If the Railway Rates Tribunal had been left with the functions which Parliament



gave it in 1921 so far as the general level of railway charges was concerned, it would have been bound to sanction an increase of railway charges, if it was of the opinion that traffic would stand it. He had considered very carefully whether he ought to take the advice of the permanent members of the Railway Rates Tribunal acting in an advisory capacity, or whether it was unnecessary for him to do so. They could not call in question the necessity for adjusting charges to meet the increased charges due to the war, nor would they have been in any better position to satisfy themselves as to the actual amount of the increases, which officers of his Department had investigated. It seemed to him therefore that all these three gentlemen could have done would have been to suggest variations in the incidence of the increases. Experience indicated that several months might be needed for an inquiry and every week's delay meant that an additional sum of about £400,000 was added to the sum which sooner or later had to be met by increased charges. In view of that he came definitely to the conclusion that the balance of advantage lay in favour of action at the earliest possible moment, that he would be failing in his duty in securing advice of members of the Railway Rates Tribunal on a simple problem. Under the agreement the Government would have been obliged later on to impose additional charges on railway users which would not have been necessary if prompt action had been taken. He had promised to consider representations and if necessary he would refer them to the permanent members of the Railway Rates Tribunal acting in a consultative capacity. The increase proposed from May 1 was the least that could be sanctioned in conformity with the railway agreement. If he had yielded to the temptation to take shelter behind the members of the Railway Rates Tribunal the result would simply have been to put off the evil day.

Col. Sir George Courthope (Rye—C.) said that he had the honour, or maybe the misfortune, to be the Chairman of the Committee of Railway Directors. Many speakers in the debate had spoken as though this were a railway demand to the Government. What had led to the misconception was that the railways were run by the Railway Executive Committee under and for the Minister of Transport in the interests of the country. It was wrong to suggest that all increased labour cost could be claimed as an expense to be made good by higher charges. Only increased labour cost due to decisions of the Government could be claimed. The normal increase of cost was due to the normal war traffic. It did not come into the calculation at all. The £9,750,000 was the increase of wages which the railways had to pay, due to the increased scales approved by the Ministry of Transport, to which the railway companies had no say at all. The other

£10,250,000 which was the increase in cost of raw material due to the war was not a matter over which the railway companies had any control.

#### Sir Henry Maybury

Lord Apsley (Bristol, C.—C.), on April 17, asked the Minister of Transport in what capacity the services of Sir Henry Maybury were being retained by his department; and whether he was also being employed by any other Government department in an advisory or executive capacity.

Captain Wallace: Sir Henry Maybury is one of the members appointed by the London Passenger Transport Board on the London & Home Counties Traffic Advisory Committee, but his services are not retained by my Department in any capacity.

#### Whitsun Traffic

Lord Apsley (Bristol, C.—C.), on April 17 asked the Minister of Transport what special measures were being taken to deal with the Whitsun traffic between the south coast of Wales and the north coast of Somerset and Devon, in view of the compulsory closing of the existing air services.

Captain Euan Wallace (Minister of Transport) said he was advised that there was no reason to expect that the railway services would not be adequate for this traffic. No special measures were therefore in contemplation.

Lord Apsley then asked if the railways had considered the very large volume of traffic that would arise if the ferry boat was not put into operation, and were they taking special measures to deal with it.

Captain Wallace: My information is that they have considered the amount of traffic that is likely to arise, and that they will be able to deal with it.

#### Edinburgh and Glasgow Railway Stations

Mr. A. Woodburn (Clackmannan and Eastern—Lab.), on April 17, asked the Minister of Transport (1) whether he was prepared to arrange for the supply of platform tickets by automatic machines at Waverley station, Edinburgh, and Queen Street station, Glasgow, as in the case of L.M.S.R. stations in both towns, with a view to avoiding the congestion at the booking-office windows, which causes delay, irritation, and sometimes loss of trains to *bona-fide* passengers; and (2) whether he was aware that the charge of 3d. a person for platform tickets at Waverley station, Edinburgh, and Queen Street station, Glasgow, only resulted in preventing poor people securing admission to the platforms; that the congestion at the entrances impeded admission to the platforms of *bona-fide* passengers; that in both stations there was ample platform accommodation, and more than at the L.M.S.R. stations where 1d. was the charge; and whether he could arrange for a uniform platform charge at all Scottish stations.

Captain Wallace: I am having the hon. member's suggestions considered.

## Staff and Labour Matters

### Workmen's Compensation

An appeal by Mrs. Noble, the widow of a railway fireman who was killed while walking along the line, which was allowed by the House of Lords on April 18, is of considerable interest. Mrs. Noble claimed compensation under the Workmen's Compensation Acts in respect of the death of her husband, a fireman in the employment of the Southern Railway Company, who was killed on the night of August 25, 1938, by an electric train when walking from the locomotive depot to which he was attached to Norwood Junction station, from which station he had been told to go by train to East Croydon. Mr. Noble had departed from the recognised safe route and was walking along a highly dangerous route between or in close proximity to the rails used by the electric trains. The use of that route by the employees of the railway company was strictly prohibited, and a notice had been issued specifying the exact route which had to be taken between the locomotive depot and the station.

The county court Judge held that section 1 (2) of the Workmen's Compensation Act, 1925, did not avail the workman, and that he was bound by *Clarke v. Southern Railway Company* to issue an Award in favour of the respondents. Mrs. Noble's appeal to the Court of Appeal was dismissed, but the House of Lords ruled that the judgment of the Court of Appeal must be reversed and the matter must be remitted to the County Court Judge, unless the parties agree, for the purpose of fixing the amount of compensation.

### Forthcoming Events

- Apr. 26 (Fri.).—Institution of Mechanical Engineers, Storey's Gate, London, S.W.1, 6 p.m. "Fuel injection in oil engines in relation to combustion," by Mr. G. W. A. Green.
- Apr. 27 (Sat.).—Permanent Way Institution (Manchester-Liverpool). Inspection of F.B. 131 lb. and 110 lb. track, conducted by Mr. N. W. Swinnerton.
- Apr. 30 (Tues.).—London School of Economics, at Canterbury Hall, Cartwright Gardens, W.C.1, 5 p.m. "The problem of railway charges (2)," by Mr. Roger Gibb.
- May 7 (Tues.).—London School of Economics, at Canterbury Hall, Cartwright Gardens, W.C.1, 5 p.m. "The problem of railway charges (3)," by Mr. Roger Gibb.
- May 9 (Thurs.).—Institution of Electrical Engineers, Savoy Place, London, W.C.2, 6 p.m. Annual general meeting.
- May 14 (Tues.).—Institution of Civil Engineers, Great George Street, London, S.W.1, 5.30 p.m. "Cliff stabilisation works in London clay," by Mr. J. Duvivier.
- May 23 (Thurs.).—Model Railway Club, at St. John's Schools, Tottenham Court Road, W.1, 7.30 p.m. "The past 40 years in retrospect," by Mr. Charles E. Lee.
- May 24 (Fri.).—50th annual dinner of the Past and Present Crewe Pupils and Premium Apprentices. To be held at Oddenino's Hotel, Regent Street, London, at 7.15 for 7.45 p.m. Chairman, Sir Nigel Gresley.
- May 25 (Sat.).—Permanent Way Institution (Manchester-Liverpool). Inspection of carriage repair shop and main sub-station, Birkenhead and Manor Road.

## NOTES AND NEWS

**Bekonscot Model Railway.**—The Bekonscot model railway village, and garden at Beaconsfield were opened last Sunday, and remain open for the whole of the present week in aid of various charities.

**Collision at Horsham, S.R.**—On April 19 the 5.42 p.m. electric train from Three Bridges ran into the back of the 6 p.m. steam train to Guildford, which was standing in Horsham station. Only slight damage was suffered.

**American Railway Accident.**—The New York Central Lake Shore Limited from New York to Chicago was derailed at a curve near Littlefalls, New York State, last Saturday in the early hours of the morning. It is reported that 38 persons, including the driver and fireman, lost their lives.

**Institution of Civil Engineers.**—In place of its usual annual dinner, the holding of which was not practicable because of war conditions, the Institution of Civil Engineers held a luncheon at the Savoy Hotel on April 19. Sir Clement D. M. Hindley, the President, was in the chair. The principal guests were the Home Secretary, Sir John Anderson, and the Minister of Information, Sir John Reith.

**Railway Charges Problem.**—Mr. Roger Gibb, on April 23, delivered a public lecture on "The Problem of Railway Charges" at the London School of Economics, Canterbury Hall, Cartwright Gardens, W.C.1. Sir Arthur Griffith Boscawen presided. The lecturer dealt at length with disintegration of rates, a practice which he argued should be abolished. We hope to publish a summary of the lecture in an early issue of THE RAILWAY GAZETTE.

**Japanese Accident: 107 Killed.**—About 8.40 a.m. on March 5, a mixed train from Yonezawa to Saka-machi plunged into the Ara river, due to some 65 ft. of the bridge over it having been carried away by an avalanche. The engine, tender, and five of the six coaches fell 80 ft. into the river, and only 23 passengers in the sixth coach out of a

total of at least 130 on the train were not killed; of the 23, 8 were seriously injured. Four of the five coaches which were not submerged with the engine in the river caught fire and many passengers were burnt. Deep snow hampered the relief measures. The scene of this disaster was near the Mt. Yokone tunnel in Yamagata Prefecture.

**Italy to Encourage Visits to Paris Fair.**—Italy has decided to reduce fares on the Italian State Railways by 33 per cent. for travellers going to the Paris Fair, according to the Rome radio, quoted by Reuters. It was added that visas would be issued free of charge. The fair is to be held from May 4 to May 25.

**Erie Railroad Reorganisation.**—The Interstate Commerce Commission has issued a reorganisation plan for the Erie Railroad Company. Holders of common and preference shares will receive no par common stock in the ratio of 1 to 5, plus the right to purchase the common stock, at \$37.17 a share, in the ratio of 1½ shares for every share held. The plan has to be approved by the Court and by the security holders.

**Crewe Pupils and Premium Apprentices.**—The 50th annual dinner of the Crewe Pupils and Premium Apprentices will be held at Oddenino's Hotel, Regent Street, London, on Friday, May 24. The chair will be taken by Sir Nigel Gresley. Mr. Reginald Terrell, the Honorary Secretary of this function, will be glad to hear from past Crewe men who wish to attend. His address is 3, Victoria Street, London, S.W.1; Telephone, Abbey 3592.

**Last of a Famous Locomotive Class.**—After nearly half-a-century of useful service, a famous British locomotive type has passed from the active list with the withdrawal by the L.M.S.R. of engine No. 17925. This was the last working survivor of a class of 15 engines that in 1894 introduced into Britain the 4-6-0 wheel arrangement. The class

known as "Jones Goods" after its designer, Mr. David Jones, was built for freight and passenger duty on the heavy gradients of what is now the Highland Section of the L.M.S.R. north of Perth, as recorded in our issue of September 20, 1935 (p. 438). The pioneer engine of the series, restored to its Highland Railway green livery, is preserved for its historic interest by the L.M.S.R. at St. Rollox works, Glasgow. It was illustrated on page 406 of THE RAILWAY GAZETTE of February 28, 1936.

## British and Irish Railway Stocks and Shares

Stocks	Highest 1939	Lowest 1939	Prices	
			April 23, 1940	Rise Fall
G.W.R.				
Cons. Ord. ....	38	21½	47½	—
5% Con. Pref. ....	92	71	98½	—
5% Red. Pref. (1950) ..	98	83	103½	+1
4% Deb. ....	103	91	102½	—
4½ Deb. ....	105½	93½	105½	-2
4½ Deb. ....	110	99	111	—
5% Deb. ....	121	109½	122½	—
2½ Deb. ....	63½	54	65½	—
5% Rt. Charge ....	117	104	116	—
5% Cons. Guar. ....	111	96½	113	—
L.M.S.R.				
Ord. ....	17	9½	22½	—
4% Pref. (1923) ....	46½	20	52	-1
4% Pref. ....	63½	37½	62	-1
5% Red. Pref. (1955) ..	83	58½	91	—
4% Deb. ....	98½	85	98½	-1
5% Red. Deb. (1952) ..	109	101½	107	—
4% Guar. ....	87½	73	87½	—
L.N.E.R.				
5% Pref. Ord. ....	5½	3½	6	-½
Def. Ord. ....	3½	1½	3½	-½
4% First Pref. ....	38½	19	49½	—
4% Second Pref. ....	15	38	20	—
5% Red. Pref. (1955) ..	55	38	71½	+1
4% First Guar. ....	78½	60	78½	—
4% Second Guar. ....	68½	47	67½	-2
3% Deb. ....	71½	57	71½	—
4% Deb. ....	93	76	93½	-1
5% Red. Deb. (1947) ..	106½	98	103½	—
4½% Sinking Fund Red. Deb. ....	104½	96	102½	—
SOUTHERN				
Pref. Ord. ....	78	46½	70 *	—
Def. Ord. ....	19½	7	21	+½
5% Pref. ....	100	76	98½	—
5% Red. Pref. (1964) ..	102½	94	102½	—
5% Guar. Pref. ....	116½	103	113	—
5% Red. Guar. Pref. (1957) ..	112½	102½	109½	-1
4% Deb. ....	103	91½	101½	—
5% Deb. ....	118½	109½	122½	—
4% Red. Deb. (1962-67) ..	106	98	104½	—
4% Red. Deb. (1970-80) ..	102	96	103½	—
FORTH BRIDGE				
4% Deb. ....	98½	81	92½	—
4% Guar. ....	95	80	92½	—
L.P.T.B.				
4½% "A" ....	115	103	108½	-1
5% "A" ....	123	106½	117½	—
4½% "T.F.A." ....	105	100½	103½	—
5% "B" ....	117½	102	109½	—
5% "C" ....	84	63½	44	-1
MERSEY				
Ord. ....	24½	17½	25½	—
4% Perp. Deb. ....	93½	88½	91	—
3% Perp. Deb. ....	77	65½	65½	—
3% Perp. Pref. ....	55	49½	54½	—
IRELAND				
BELFAST & C.D.				
Ord. ....	6	3	4	—
G. NORTHERN				
Ord. ....	6	2½	4	-½
G. SOUTHERN				
Ord. ....	13½	8	10	—
Pref. ....	26	10	22½	—
Guar. ....	40½	22	29½	-3½
Deb. ....	57	45½	50½	-2

## Irish Traffic Returns

IRELAND		Totals for 15th Week			Totals to Date		
		1940	1939	Inc. or Dec.	1940	1939	Inc. or Dec.
		£	£	£	£	£	£
Belfast & C.D. (80 miles)	pass.	2,451	3,853	— 1,402	33,324	27,044	+ 6,280
	goods	459	372	+ 87	7,190	6,365	+ 825
	total	2,910	4,225	— 1,315	40,514	33,409	+ 7,105
Great Northern (543 miles)	pass.	10,100	14,350	— 4,250	148,800	134,400	+ 14,400
	goods	13,800	8,450	+ 5,350	167,700	149,750	+ 17,950
	total	23,900	22,800	+ 1,100	316,500	284,150	+ 32,350
Great Southern (2,076 miles)	pass.	31,322	41,084	— 9,762	451,149	443,092	+ 8,057
	goods	45,408	36,865	+ 8,543	638,518	613,033	+ 25,485
	total	76,730	77,949	— 1,219	1,089,667	1,056,125	+ 33,542
L.M.S.R. (N.C.C.) (271 miles)	pass.	5,570	4,750	+ 820	64,320	49,500	+ 14,820
	goods	4,200	2,570	+ 1,630	50,240	42,660	+ 7,580
	total	9,770	7,320	+ 2,450	114,560	92,160	+ 22,400

Easter Monday, 1939

## OFFICIAL NOTICES

## Crown Agents for the Colonies

## COLONIAL GOVERNMENT APPOINTMENTS.

APPLICATIONS from qualified candidates are invited for the following post:—

**WORKS MANAGER** required for the Trinidad Government Railway for three years' service in the first instance with prospects of permanency. Salary, T\$1,920-T\$120-T\$2,880 (T\$4-80 equals £1). Free

passages, and if married for wife and children not exceeding four persons. Leave on full salary. Candidates not over 45, preferably trained on an English railway, must have had good practical experience of Railway Shops and Running Sheds, and must be qualified to act as Locomotive Superintendent in the absence of the latter.

Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M/9125.

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is noon on Wednesday. All advertisements should be addressed to:—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

## RAILWAY AND OTHER REPORTS

**Madras & Southern Mahratta Railway Co. Ltd.**—At a meeting of the board of directors held on April 22, the following dividend, payable July 1, 1940, was declared: Guaranteed interest  $1\frac{1}{4}$  per cent., stockholders' revenue account 1 per cent., making a total of  $2\frac{1}{4}$  per cent. A similar dividend was paid on July 1, 1938.

**Atchison, Topeka & Santa Fe Railway Company.**—Operating revenue for the year 1939 was \$160,639,966 against \$154,323,226 in 1938; operating expenses were \$125,334,704, against \$120,412,014; net operating revenue was therefore \$34,705,261, which com-

pares with \$33,911,212. Net railway operating income was \$19,170,865, compared with \$18,026,118, which with other income of \$2,885,423 (\$3,850,247) gives total income of \$22,056,289, against \$21,876,365. The amount available for dividends and surplus is \$8,490,832 (against \$8,216,544), and with \$295,375,264 brought in and donations of \$30,130 the total surplus is \$303,896,227. Dividends on preferred shares absorb \$6,208,640. The amount carried forward is \$294,998,190.

**Tynemouth & District Transport Co. Ltd.**—The report of this company, which is a subsidiary of Northern

General Transport Co. Ltd. (in turn a subsidiary of British Electric Traction Co. Ltd. and the L.N.E.R.) shows a total revenue for the year 1939 of £93,308, which compares with £89,951 for 1938. Total expenses, including debenture interest, provision for renewals, and tax, were £73,461 (against £71,239); the net profit was £19,846 which compares with £18,712. At £9,936 the allocation to reserve is £4,936 higher. A dividend of 10 per cent. (same) is recommended on the ordinary shares and the balance forward is £14,982, against £13,238 brought in.

**Potteries Motor Traction Co. Ltd.**—A final dividend of 6 per cent. is recommended, making 10 per cent. for the year 1939, the same as for 1938.

## CONTRACTS AND TENDERS

Taylor Bros. & Co. Ltd. has received an order from the Crown Agents for the Colonies for 330 carriage and wagon tyres for the Iraqi Railways.

The Egyptian State Railways have placed the following orders:—

Henricot Steel Foundry Co. Ltd.: Buffer shells and springs.

Brown, Bayley's Steel Works Limited: Buffer shells and springs (21.1110-4 & 5; £680).

Howell & Co. Ltd.: Steel boiler and flue tubes (17.301; £8,449; Ref. No. E.S.R. 317-G. 3.14).

The Vulcan Foundry Limited: Slide bars (21.1155; £648).

Stewarts and Lloyds Limited: Galvanised mild steel tubes (17.296; £493).

The Metropolitan-Vickers Electrical Co. Ltd. has received from the London & North Eastern Railway a part contract for Cosmos lamps to be supplied up to April 30, 1941.

The Indian Stores Department (Calcutta) has placed the following orders:—

Indian Standard Wagon Co. Ltd.: 235 and 36 helical springs.

Burn & Co. Ltd.: 200 cast steel axleboxes.

Kumardhubi Engineering Works Limited: 500 cast steel buffer plungers.

The Indian Stores Department (New Delhi) has placed the following orders:—

Indian Standard Wagon Co. Ltd.: 1,000 draw springs.

United Steel Companies (India) Limited: 230 steel flue tubes and 1,755 steel boiler and arch tubes.

According to *La Libre Belgique* dated April 4, the German State Railway has ordered 1,000 oil tank wagons from Belgian firms, and already has paid a deposit of 20,000,000 Belgian fr. on the order. The names of the firms which are sharing the order are not

likely to be announced publicly, because of general feeling in the country against Germany. *La Libre Belgique* also states that a large number of wagons built by Belgian firms to Chinese orders have until lately been on the makers' hands, owing to difficulties of shipment and payment. Most of these wagons have been acquired by the Reichsbahn, which has taken the precaution of purchasing them through a Swedish firm.

The North Western Railway of India is enquiring for tinware (No. 212-S/2; May 8 at Lahore).

The Eastern Bengal Railway is enquiring for eight boilers for broad-gauge locomotives and two boilers for metre-gauge locomotives. Tender No. G.M.A-1; June 27; D.O.T. No. T. 18502/40.

The Egyptian Ministry of Public Works is calling for tenders for spare parts for the small locomotives used for the transport of manure at Gebel-Asfar. Tenders to be in at Cairo by May 22.

The South African Railways are enquiring for 11 electric wharf cranes of 4-tons capacity, for Durban Harbour (No. 2587; May 6; D.O.T. No. T. 17640/40).

The Egyptian State Railways are enquiring for 10-ton steel box trucks (E.S.R. 17-2/3-4; July 22; for 10-ton open low-sided wagons (E.S.R. 17-2/3-6; July 29); and for 500 canvas wagon covers and 30 square covers (E.S.R. 343.G.3/40). The Chief Inspecting

Engineer is at 41, Tothill Street, London, S.W.1.

The Indian Stores Department is enquiring for the following equipment:

Plumbago or Morgan's crucibles for the N.W.R. (M-5832; May 13).

Grinding wheels, for the N.W.R. (M-5602; May 6).

Helical steel bolster, draw and buffing springs, for the N.W.R. (N-1071; May 13).

Drawbar, axleguards, bushes, etc., for the E.I.R. (N-1072.3; May 15).

Bogie bolster bearers, axleboxes, keyplates, buffer casings and other items, for the E.I.R. (N-1072/1; May 15).

Screw couplings and pin shackles, for the E.I.R. (N-1072.2; May 15).

Buffers, for the E.I.R. (N-1065; May 15).

28 axles and 8 pairs of 28½-in. disc wheels and axles, for the Jodhpur Railway (N-1062/1; May 13).

The State Railways of Thailand are understood to have asked for Belgian quotations for 800 wagons.

The Guatemala Government proposes to enlarge the buildings of the Department of Communications at an estimated cost of 500,000 quetzales.

Extensive repairs to the railway wharf at Port Augusta are under consideration by the Commonwealth Railways. The present estimated cost of the work is about £60,000.

Mr. A. J. Grainger has been appointed Sales Manager, Engineering Division of British Timken Limited. Prior to this appointment, Mr. Grainger was the company's London Sales Representative.

**TIMKEN TRADE MARK.**—The name "Timken" has recently been registered as the trade mark of British Timken Limited. The company has used the name as a trade mark for many years and the formalities of official registration have now been completed.



## Railway Stock Market

Despite the heavy increases in taxation announced in the Budget speech, which were more drastic than had been expected in the City, the stock and share markets have maintained a firmer undertone than might have been anticipated. Shares of companies directly affected by the Budget changes were marked down, but no heavy selling was reported, and sentiment, particularly in regard to leading fixed-interest bearing securities, was assisted by the gains recorded in British Government stocks. The latter were due in part to general recognition that the authorities are determined to make every effort to prevent the danger of the inflationary developments experienced in the last war. The trend in most home railway stocks was relatively satisfactory and showed improvement over that at the end of last week. The market was then temporarily under the influence of the erroneous suggestion made in some quarters that the decision to raise railway charges indicated that receipts are running below the guaranteed minimum level. On the other hand, the rate of increase in expenses arising from the war is very substantial, bearing in mind that the required 10 per cent. increase in charges is calculated to bring in

£18,000,000 in a full year. Earlier in the week L.M.S.R. ordinary, Southern deferred, and other junior stocks showed some improvement, but subsequently they came under the influence of uncertainty as to how the limitation of dividends of public companies will apply to these stocks and to other equity securities whose highest dividends were less than 4 per cent. in any of the three pre-war accounting years. Most of the senior preference stocks were firmer, as were the debentures, which, in common with other first class investment securities, are, of course, influenced by the tendency in British Funds.

As compared with a week ago Southern deferred improved from 20½ to 21½, but the preferred was unchanged on balance at 70, as was the guaranteed stock at 112½, while the 5 per cent. preference declined a point to 98½ and the debentures were fractionally lower at 101. Great Western ordinary rallied, and at 47½ was the same as a week ago, but the 5 per cent. preference was 98½ compared with 99½, and the 4 per cent. debentures 102½, compared with 103. On balance a similar tendency was observable in L.M.S.R. securities. Whereas the ordinary stock improved slightly from 22½

to 22½, the 4 per cent. senior preference was fractionally lower at 62½, and the 1923 preference 52½, compared with 53½, while the 4 per cent. debentures were 98½, compared with 99, and the 5 per cent. debentures again 107. L.M.S.R. 4 per cent. guaranteed stock was 87½, as against 88½ a week ago. Among L.N.E.R. stocks the second preference was half-a-point lower on the week, and the first preference a point down at 49. Moreover, the second guaranteed at 67½ showed a loss of 2½ points, but the first guaranteed at 78½ was unchanged on balance. The 4 per cent. debentures were 94½ and the 3 per cents. 71½. London Transport "C" was lower at 44, compared with 44½ a week ago, and Metropolitan Assented at 55 showed a loss of a point.

The tendency in Argentine railway securities remained favourable on the whole, but the amount of business in these and other foreign railway stocks was small. Central Argentine and B.A. Gt. Southern preference stocks were moderately better, while the debentures were firmly held and not easy to obtain in any amount at around current prices. Antofagasta ordinary and preference held last week's improvement.

### Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

	Railways	Miles open 1939-40	Week Ending	Traffic for Week		No. of Weeks	Aggregate Traffic to Date			Shares or Stock	Prices			
				Total this year	Inc. or Dec. compared with 1939		Totals		Increase or Decrease		Highest 1939	Lowest 1939	April 23, 1940	Yield % (See Note)
							This Year	Last Year						
South & Central America	Antofagasta (Chili) & Bolivia	834	14.4.40	£ 16,550	+ £ 3,220	15	£ 291,140	£ 206,690	+ £ 84,450	Ord. Stk.	10½	4½	11	Nil
	Argentine North Eastern	753	13.4.40	ps. 159,200	- ps. 12,600	42	ps. 6,213,800	ps. 6,416,900	- ps. 203,100	Bonds	4½	2	3½	Nil
	Bolivar	174	Mar. 1940	4,370	- 230	13	11,590	11,700	- 110	6 p.c. Deb.	7½	5½	7	Nil
	Brazil									Bonds	5½	4½	7½	6½
	Buenos Ayres & Pacific	2,801	13.4.40	ps. 1,626,000	- ps. 183,000	42	ps. 57,239,000	ps. 58,875,000	- ps. 1,636,000	Ord. Stk.	5½	2	4	Nil
	Buenos Aires Central	190	9.3.40	976,000	- 81,600	37	83,635,600	83,822,400	- 186,800	Mt. Deb.	14	8	14	Nil
	Buenos Ayres Gt. Southern	5,082	13.4.40	ps. 2,440,000	- ps. 120,000	42	ps. 98,225,000	ps. 97,176,000	+ ps. 1,049,000	Ord. Stk.	13½	4½	8½	Nil
	Buenos Ayres Western	1,930	13.4.40	ps. 880,000	- ps. 78,000	42	ps. 32,513,000	ps. 30,399,000	+ ps. 2,114,000	"	10½	4	7	Nil
	Central Argentine	3,700	13.4.40	ps. 1,774,750	- ps. 343,500	42	ps. 72,982,300	ps. 79,016,450	- ps. 6,034,150	"	11½	4	7	Nil
	Do.									Did.	4	1½	4	Nil
	Cent. Uruguay of M. Video	972	13.4.40	22,656	+ 3,271	42	875,313	767,324	+ 107,989	Ord. Stk.	2½	1½	3½	Nil
	Costa Rica	188	Feb. 1940	16,895	+ 4,824	35	136,096	177,211	- 41,115	Ord. Stk.	24½	18	22	9½
	Dorada	70	Mar. 1940	11,800	- 2,500	13	34,500	40,400	- 5,900	1 Mt. Db.	104½	102	102½	5½
	Entre Rios	810	13.4.40	ps. 205,000	- ps. 34,400	42	ps. 9,855,500	ps. 10,486,500	- ps. 631,000	Ord. Stk.	6	3	3½	Nil
	Great Western of Brazil	1,016	13.4.40	11,330	+ 3,500	15	191,400	162,000	+ 29,400	Ord. Sh.	3/-	1/2½	1½	Nil
	International of C. Amer.	794	Feb. 1940	\$604,831	+ \$55,394	8	\$1,170,321	\$1,097,710	+ \$72,611	"				
	Interoceanic of Mexico		Mar. 1940	7,370	+ 955	13	21,975	15,820	+ 6,155	1st Pref.	7½d.	7½d.	6½	Nil
	La Guaira & Caracas	22½	13.4.40	19,733	+ 2,891	15	335,878	307,977	+ 27,901	Stk.	7	6½	6½	Nil
	Leopoldina	1,918	13.4.40	19,733	+ 2,891	15	335,878	307,977	+ 27,901	Ord. Stk.	2½	1	2	Nil
	Mexican	483	21.3.40	\$317,100	+ \$1,400	11	\$3,651,600	\$3,578,300	+ \$73,300	"	1½	1	1	Nil
Midland of Uruguay	319	Mar. 1940	12,567	+ 3,360	40	93,700	83,075	+ 10,625	"	2/-	1	1	Nil	
Nitrate	386	15.4.40	5,627	+ 504	15	55,960	38,118	+ 17,842	Ord. Sh.	2½	1½	2½	5½	
Paraguay Central	274	13.4.40	\$3,133,000	+ \$254,000	42	\$131,022,000	\$125,908,000	+ \$5,114,000	Pr. Li. Stk.	45½	36	40	15½	
Peruvian Corporation	1,059	Mar. 1940	74,738	+ 5,140	40	606,651	609,165	- 2,514	Pref.	1½	1½	3	Nil	
Salvador	100	23.3.40	c30,228	+ c10,178	39	c743,333	c827,514	- c84,181	Pr. Li. Db.	19½	16	15	Nil	
San Paulo	153½	7.4.40	37,050	+ 12,966	14	469,363	398,836	+ 70,527	Ord. Stk.	38	20	46½	5½	
Taitai	160	Mar. 1940	3,005	- 730	40	23,135	27,530	- 4,395	Ord. Sh.	8	6/6	7½	Nil	
United of Havana	1,353	13.4.40	38,462	+ 10,488	42	977,301	970,396	+ 6,905	Ord. Stk.	2	2	2	Nil	
Uruguay Northern	73	Mar. 1940	1,411	+ 553	40	9,950	9,104	+ 846	Deb. Stk.	2	2	2	Nil	
Canada	Canadian National	23,695	14.4.40	819,464	+ 116,357	15	12,269,788	9,616,768	+ 2,653,020	Perp. Dbs.	74½	60	79	5½
	Canadian Northern								4 p.c.					
	Grand Trunk								Ord. Stk.	100½	76	99½	4	
	Canadian Pacific	17,167	14.4.40	543,200	+ 43,403	15	8,222,800	6,855,400	+ 1,367,400	Ord. Gar.	7½	3½	8½	Nil
India & Far East	Assam Bengal	1,329	31.3.40	46,747	- 1,614	52	1,587,855	1,532,195	+ 55,660	Ord. Stk.	76½	60	79½	3½
	Barsi Light	202	31.3.40	3,037	- 2,610	52	126,368	138,750	- 12,382	Ord. Sh.	56½	50½	43½	8½
	Bengal & North Western	2,096	31.3.40	87,859	- 2,561	26	1,455,701	1,473,406	- 17,705	Ord. Stk.	277	229½	278	5½
	Bengal Doars & Extension	161	31.3.40	3,491	+ 286	52	141,478	147,657	- 6,179	"	91	84½	215	3
	Bengal-Nagpur	3,267	31.3.40	269,400	+ 43,767	52	8,188,495	7,101,783	+ 1,086,712	"	94½	83½	95½	4½
	Bombay, Baroda & C. India	2,986	10.4.40	271,050	+ 12,900	2	271,050	258,150	+ 12,900	"	108	90	107½	5½
	Madras & Southern Mahratta	2,967	31.3.40	227,025	+ 50,681	52	5,920,351	5,658,362	+ 261,989	"	104½	92	102½	7½
	Rohilkund & Kumaon	571	31.3.40	21,333	+ 1,478	26	310,386	280,442	+ 29,944	"	280	263	280	5½
	South Indian	2,531½	20.3.40	124,894	+ 15,658	51	3,491,059	3,467,784	+ 23,274	"	102½	88	92½	5½
Various	Beira	204	Jan. 1940	74,624	- 17	294,262								
	Egyptian Delta	623	20.3.40	5,324	- 322	51	208,791	210,068	- 1,277	Pr. Sh.	1	1	1	Nil
	Kenya & Uganda	1,625	May 1939	206,557	- 11,295	21	1,220,870	1,309,332	- 88,462	B. Deb.	55	39	48	7½
	Manila									Inc. Deb.	91½	87½	82½	4½
	Midland of W. Australia	277	Feb. 1940	12,214	- 2,729	35	102,871	122,176	- 19,305					
	Nigerian	1,900	24.2.40	58,092	+ 12,884	48	1,856,487	1,944,701	- 88,214					
	Rhodesia	2,442½	Jan. 1940	384,405	+ 17	1,520,480								
	South Africa	13,288	30.3.40	577,207	+ 103,483	52	33,816,950	32,492,001	+ 1,324,949					
	Victoria	4,774	Jan., 1940	989,333	+ 206,698	31	5,827,335	5,516,376	+ 310,959					

Note. Yields are based on the approximate current prices and are within a fraction of ½. Argentine traffic is now given in pesos. † Receipts are calculated @ 1s. 6d. to the rupee. § ex dividend